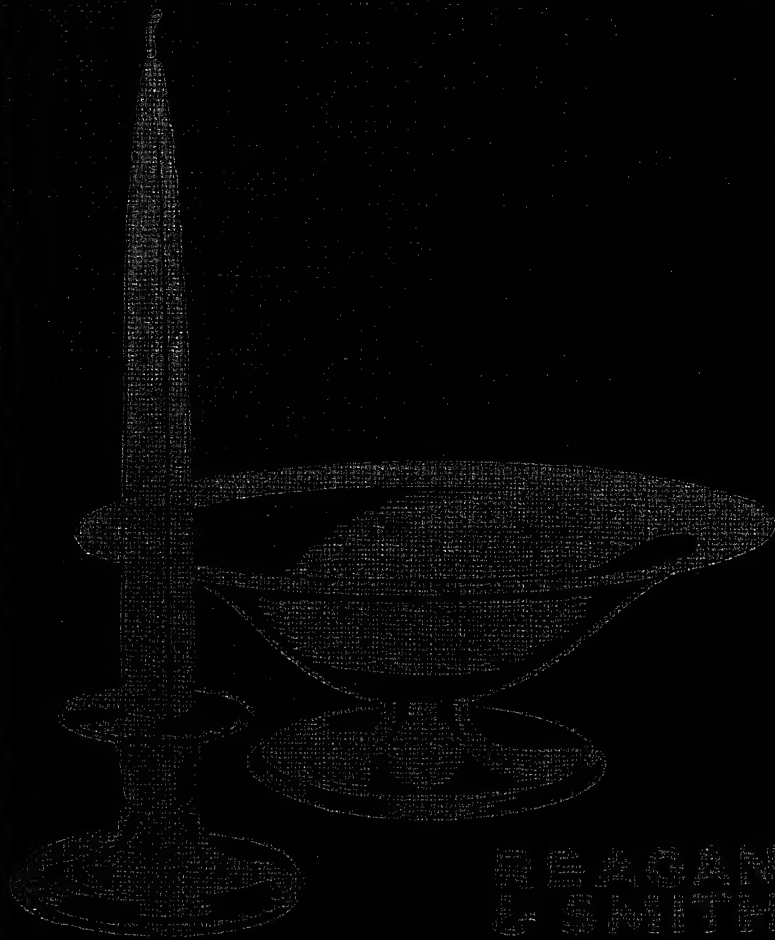


50 METAL SPINNING PROJECTS



BEAGAN
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739 R28f

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50 METAL-SPINNING PROJECTS

For Craftsmen, Instructors, and Students

JAMES E. REAGAN

AND

EARL E. SMITH

Instructors of Metalwork, John Adams High School
Cleveland, Ohio

THE BRUCE PUBLISHING COMPANY
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Coaster as given on p. 9

P R E F A C E

THE authors offer this book with the hope that it will help solve the problem of finding projects of interest in the field of metal spinning. It is intended to be used in connection with *Metal Spinning*, by Reagan and Smith, which contains detailed information on the spinning process.

Every project shown has been made in a school shop under our personal supervision. All the designs have artistic value and are varied enough to suit the taste and experience of both the beginner and the skilled spinner. Additional variety has been given by using different metals. There are projects of copper, brass, pewter, aluminum, and Galvalloy.

The beauty of many of the articles has been enhanced by decorating them with plastics. This is the new material that is gaining so much popularity in the industrial world, and in order that our readers may know something about the working of it, we are adding a chapter dealing solely with this material.

The authors wish to acknowledge the assistance given to them by the Broadhead and Garrett Company, Cleveland, Ohio, in securing for them some necessary materials to complete these projects.

JAMES E. REAGAN
EARL E. SMITH

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50 METAL-SPINNING PROJECTS

COASTER

A SET of these coasters will gladden the heart of any hostess. The one pictured here was made of 22-gauge copper, but other metals may be used if desired. If you choose pewter, use 18-gauge metal.

The coaster requires a $4\frac{1}{2}$ -in. disk and while appearing very easy to make, the beading tool or backstick must be used to make the rolled edge.

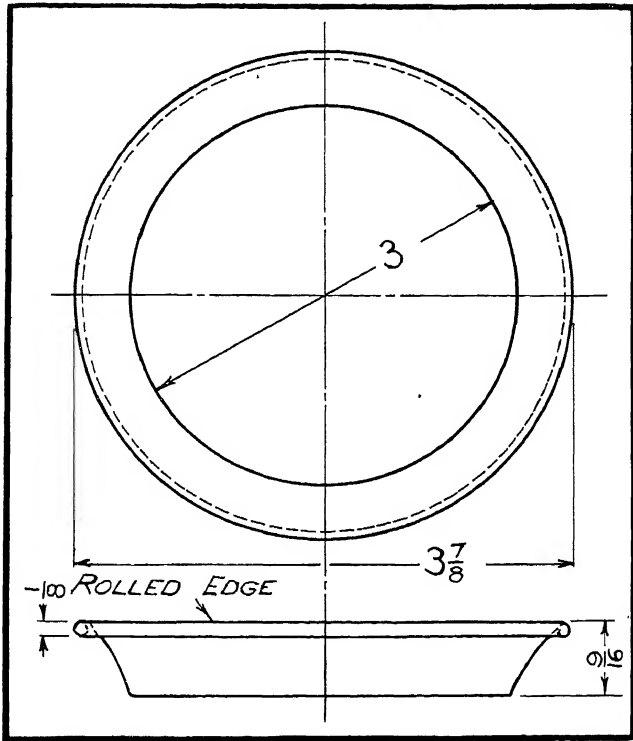


PLATE 1. Coaster

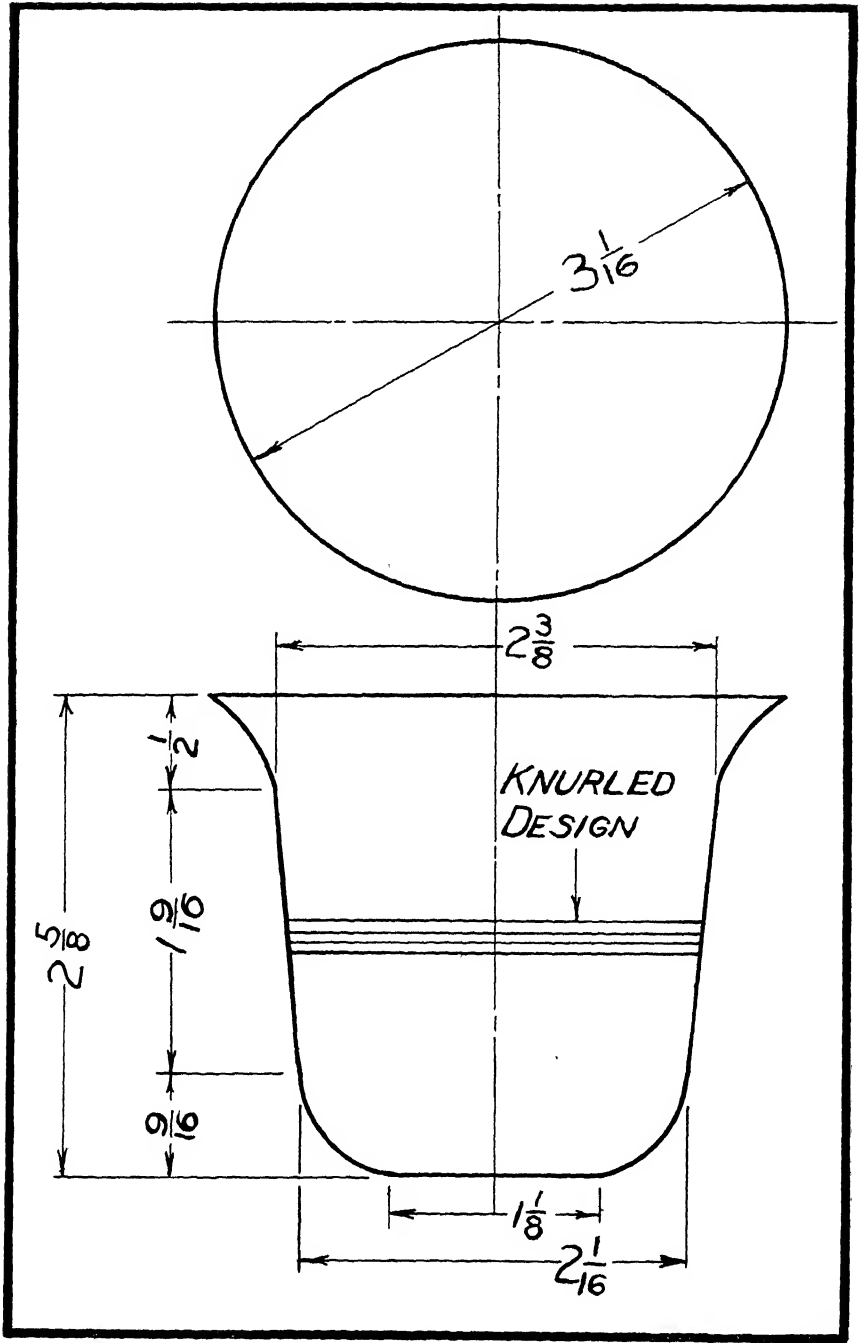


PLATE 2. Tomato-Juice Cup



TOMATO-JUICE CUP

THESE tomato-juice cups will give a party dress to any table. They are large enough to hold a satisfying drink, and though simple in design, they have just enough sweep to the lines to make them graceful.

The tomato-juice cup is made of 18-gauge pewter, which blends well with any table service. Each cup requires a 6-in. disk, and is trimmed with lines applied by means of a diamond point or knurling tool.

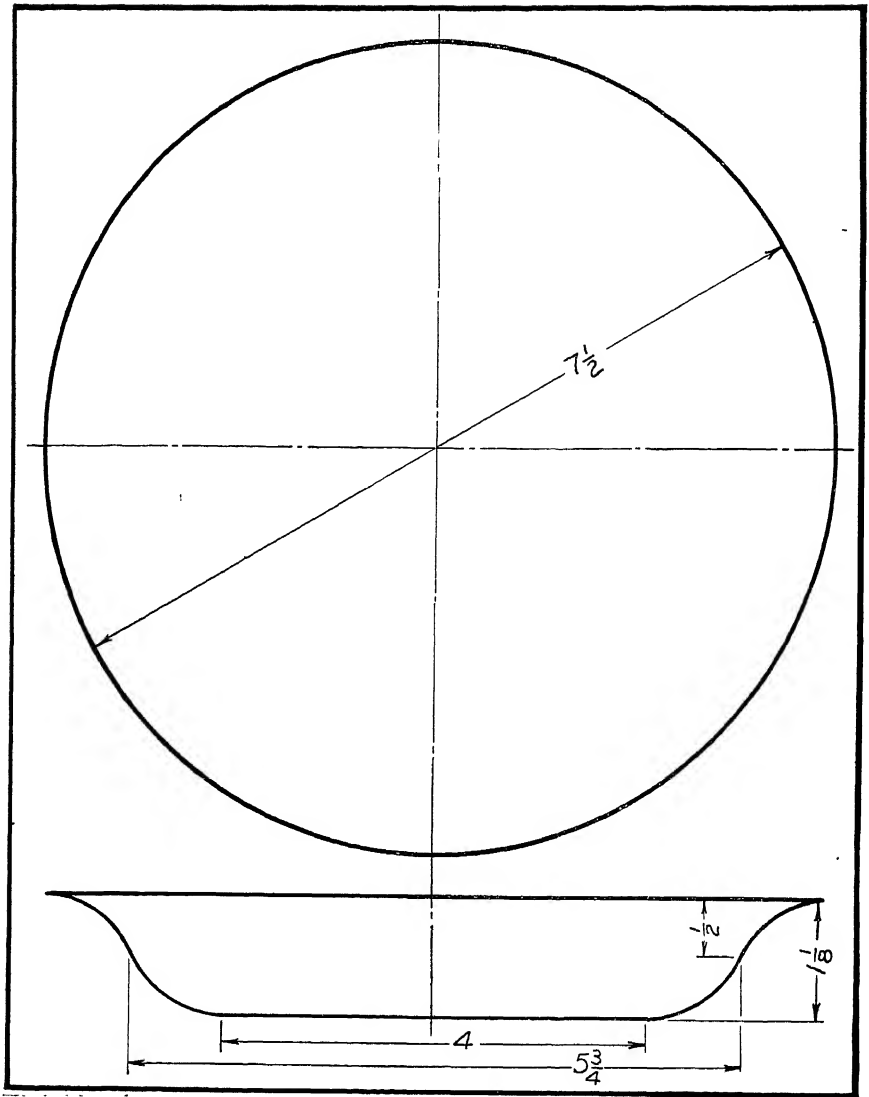


PLATE 3. Pansy Bowl



PANSY BOWL

THIS shallow bowl answers the question of how to arrange short-stemmed flowers.

It is a good project for the beginner, as it gives experience in spinning the metal to the chuck. The pansy bowl requires a 6-in. disk of 18-gauge metal, if pewter is used, or 20-gauge, if copper or brass is used.

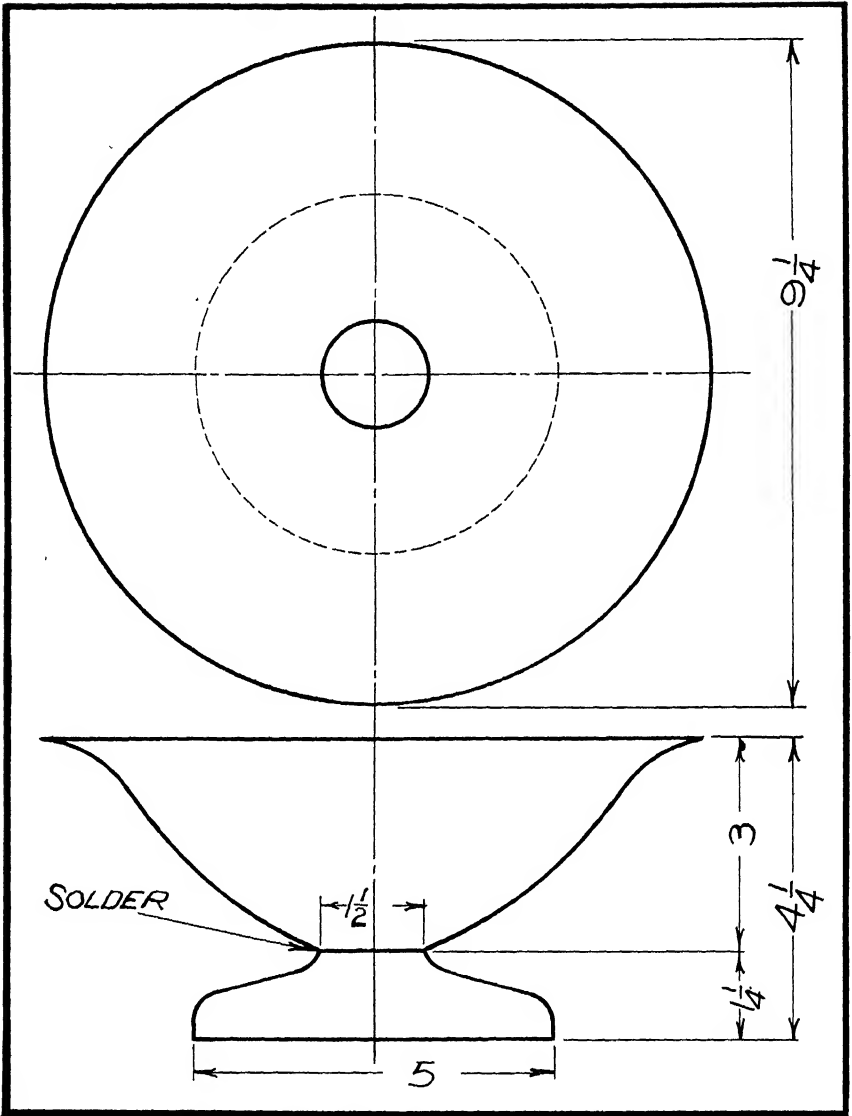
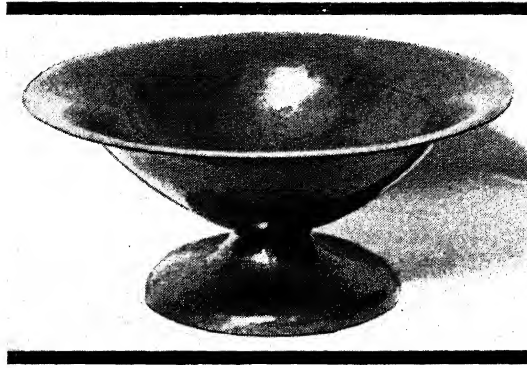


PLATE 4. Copper Fruit Bowl



COPPER FRUIT BOWL

THE ruddy copper and the sweeping lines of this bowl make it one you will enjoy owning. Heap it with tempting fruit or colorful flowers, and you will have an object of rare beauty.

This project gives experience in the spinning of heavy metal. Both the bowl and base are spun of 20-gauge metals and require disks of 10-in. and 6-in. diameters.

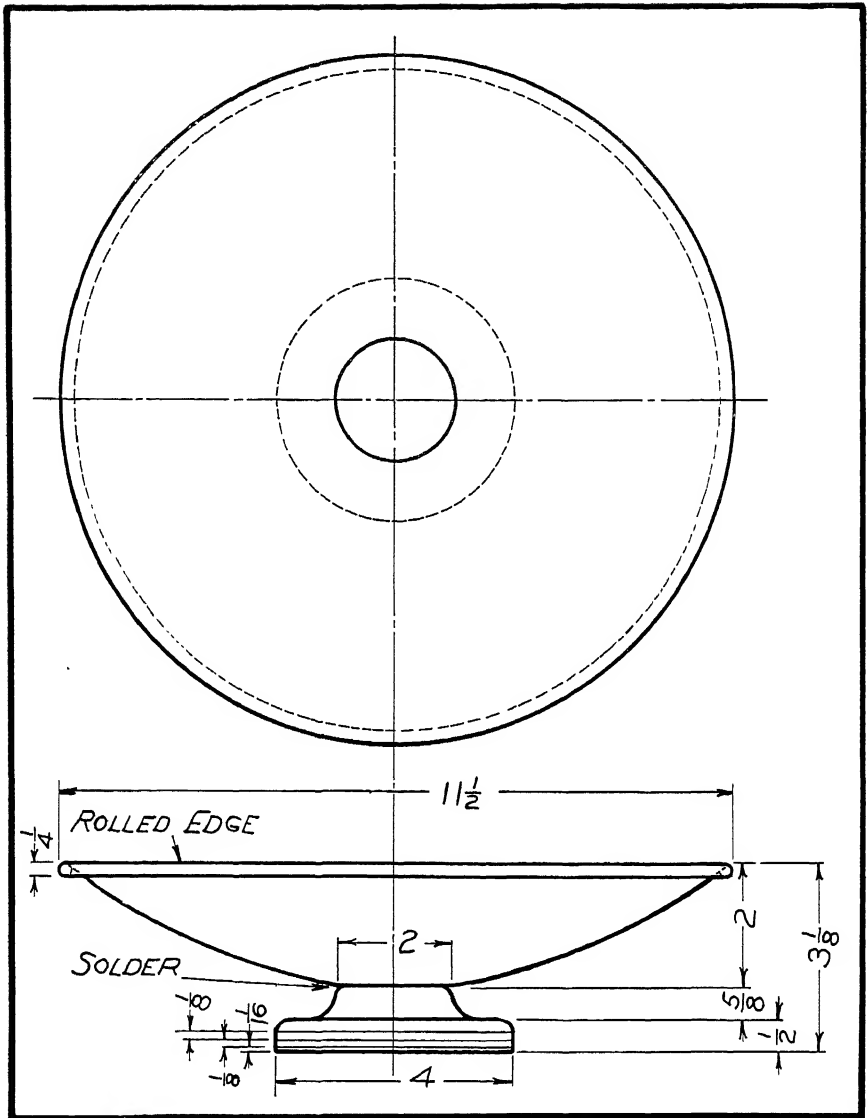
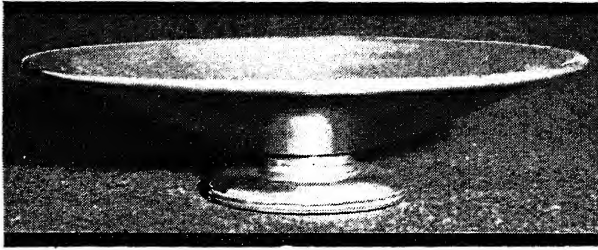


PLATE 5. Flower or Fruit Bowl



FLOWER OR FRUIT BOWL

THE flowing lines of this bowl make it a true aristocrat. It is equally beautiful in either copper or pewter.

The body requires a 12-in. disk of 20-gauge copper or 16-gauge pewter. If it is spun of pewter, the edge is rolled for added strength, but if copper is used, this is unnecessary as the copper will harden during the spinning process and will give the required rigidity.

The base is spun from a 6-in. disk, and its surface is enriched with grooves made with the diamond-point tool.

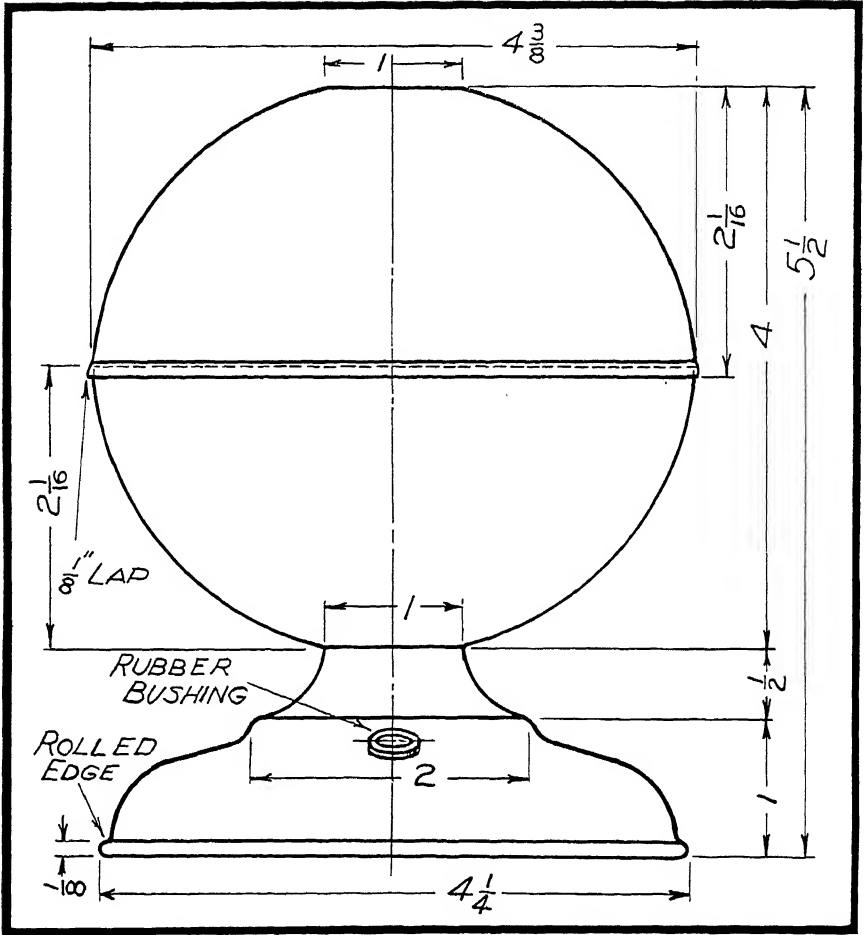
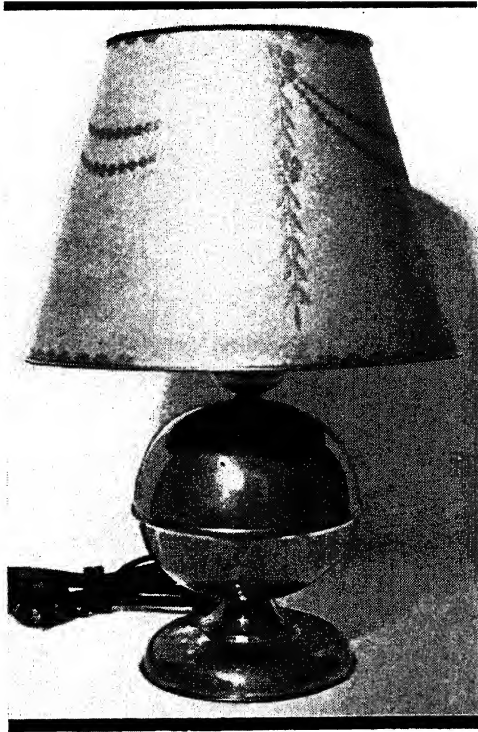


PLATE 6. Lamp

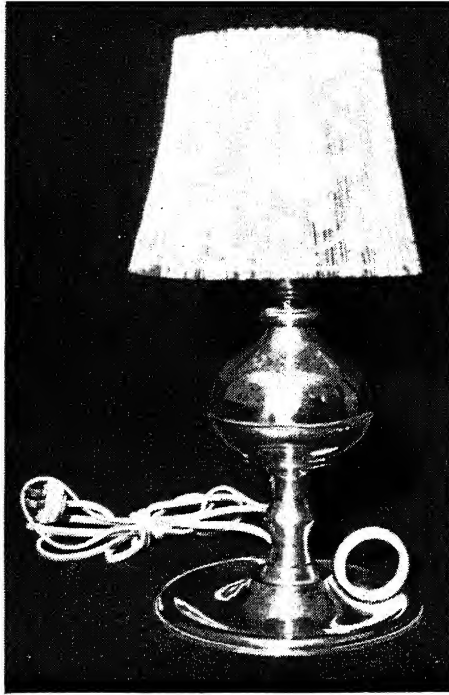


LAMP

THIS squatty, little lamp has a particular attraction for most boys. They all want to make it for their own rooms.

The body of the lamp is spun in two parts, the same chuck being used for both shells. A 6-in. disk of 20-gauge copper or Galvalloy is required for each shell, while the base is spun from a 5-in. disk.

The three shells are fastened together with $\frac{1}{8}$ -in. pipe, as shown on page 57 of *Metal Spinning* by Reagan and Smith.



LAMP

THIS lamp was inspired by a brass whale-oil lamp. It has been kept true to shape and size, but has been electrified for efficiency. We made it of 18-gauge pewter with a plastic handle, but it is just as attractive made of 20-gauge copper or brass. These lamps used in pairs are most effective.

The spinning of the shells is not difficult. The lamp requires a $7\frac{1}{2}$ -in. disk for the base, a 5-in. disk for the lower shell, and a 6-in. disk for the top shell. The stem is cast from pewter or round stock of other metals, turned to shape on a lathe. The top piece is also cast or made from round stock. They are all fastened together as illustrated on page 57 of *Metal Spinning* by Reagan and Smith.

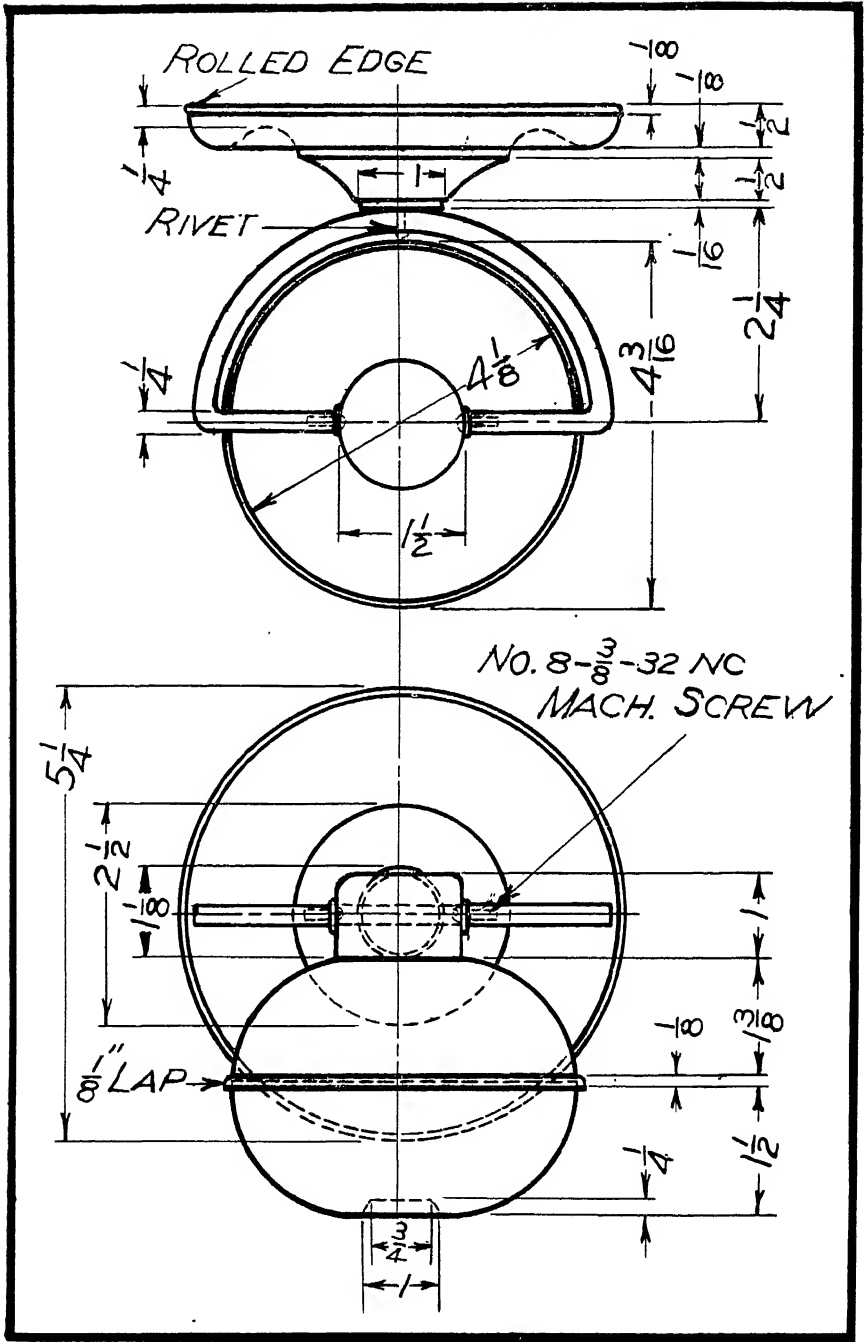
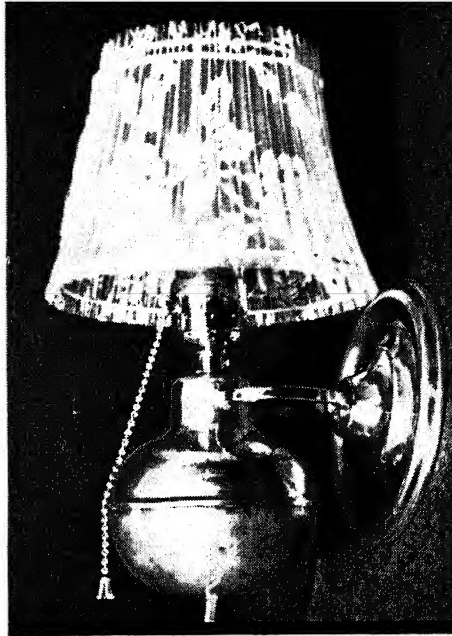


PLATE 8. Pin-Up Lamp



PIN-UP LAMP

THIS lamp will prove a delight to anyone. It is both decorative and practical, and has a quaint charm not often found in this type of project. We are proud to add it to our collection of lamp projects. The metal used may be either 18-gauge pewter or 20-gauge copper.

The reflector is spun from a 6-in. disk. The edge is rolled both for strength and for protection of the surface on which it hangs. The shells for the body require a 6-in. disk for the upper half and a 5-in. disk for the lower. The recess in the bottom is formed by the pressure placed on the tail block. This forces the metal into the recess in the chuck. The shells are held together as shown on page 57 of *Metal Spinning*, by Reagan and Smith.

The supporting ring is shaped, drilled, and tapped, and is then riveted to the reflector. The bowl is fastened to it as shown in the drawing.

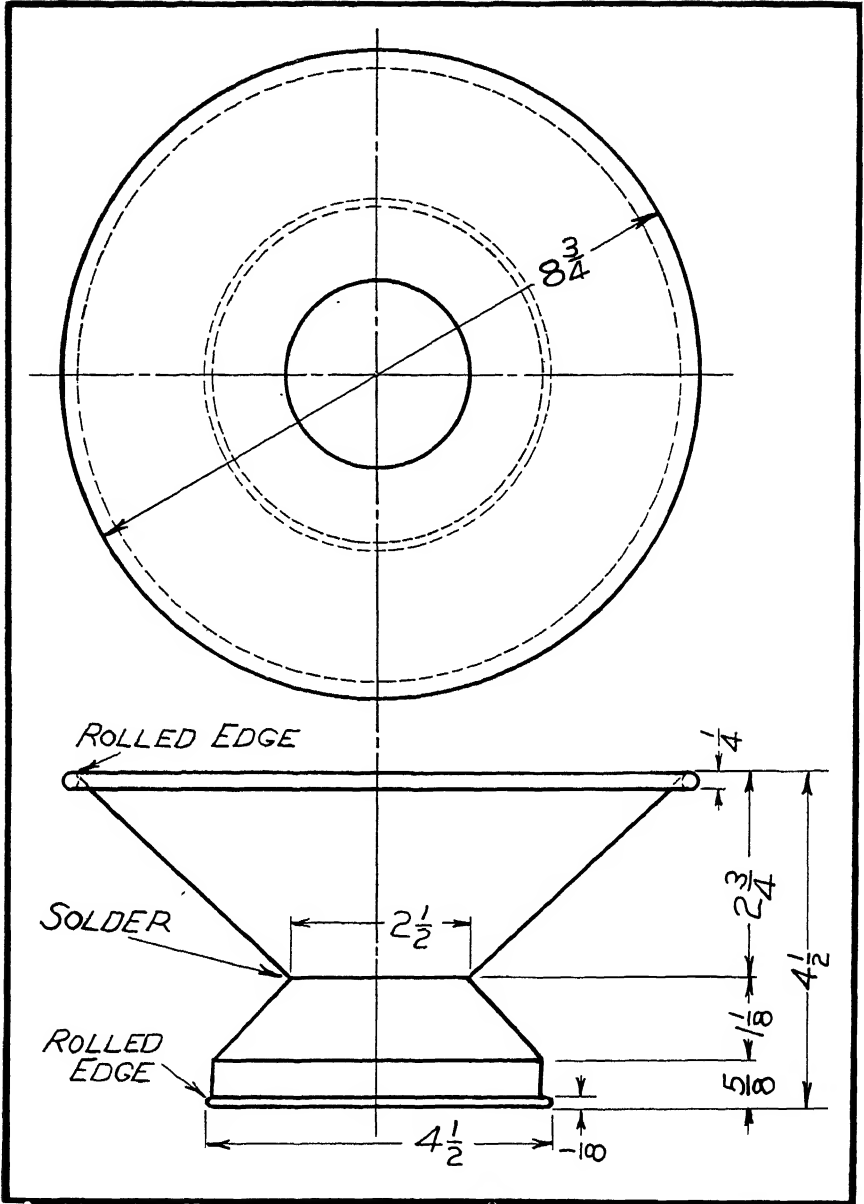
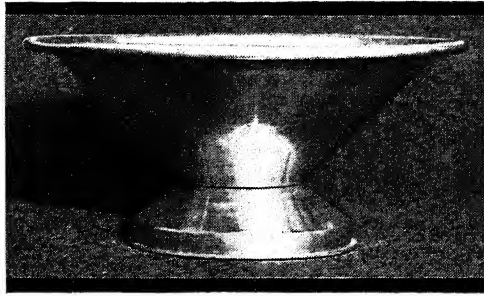


PLATE 9. Flower Bowl



FLOWER BOWL

THE straight lines of this project give it a modernistic trend that is very unusual and new in metal.

The bowl part requires a 12-in. disk of 18-gauge copper, brass, Galalloy, or pewter, while the base is spun from a 6-in. disk. The two parts are soldered together.

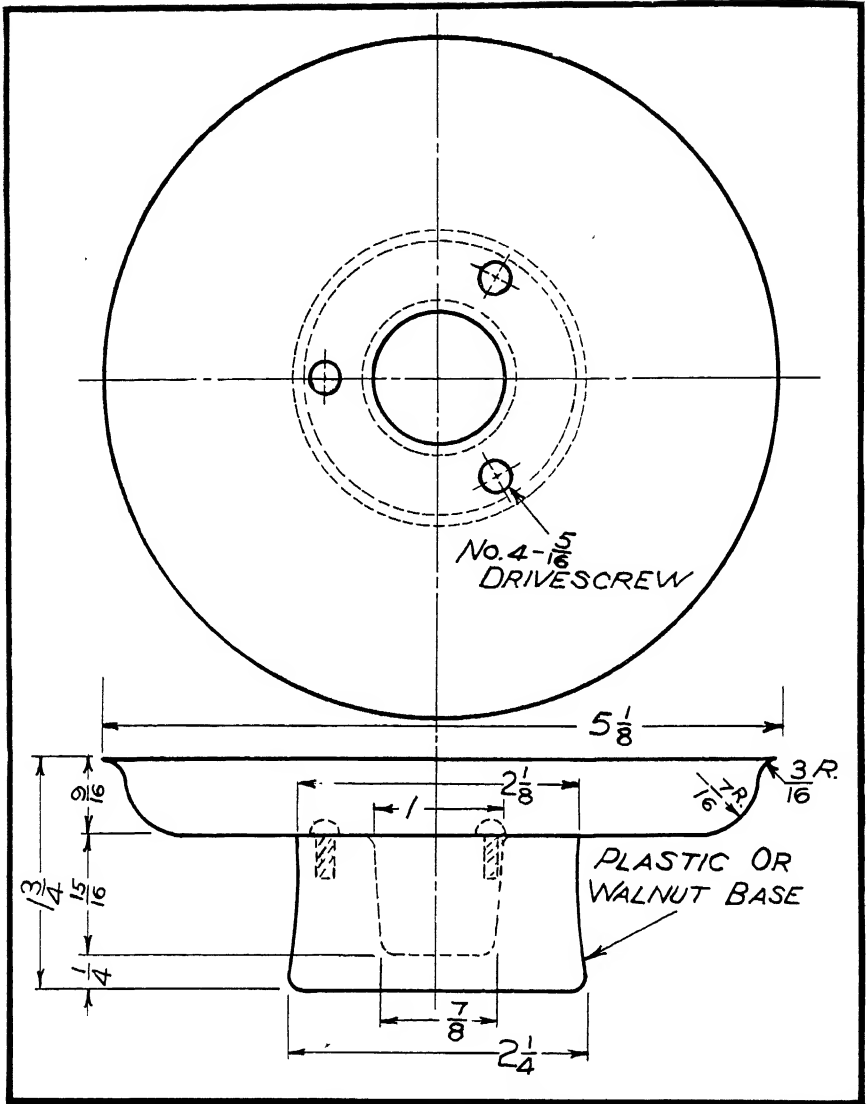
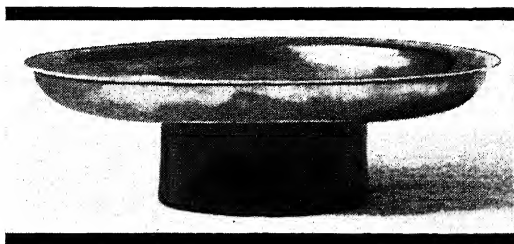


PLATE 10. Candleholder



CANDLEHOLDER

CANDLEHOLDERS are always in favor, but here we are offering something new and different—candleholders with plastic or wood bases. These are very effective when used in pairs on a high mantle.

A 6-in. disk of 20-gauge copper is necessary for the shell. While not difficult to spin, there is one caution that must be observed. The spinner must spin the metal securely to the chuck at the very beginning, in order to avoid breaking the metal when spinning the tray.

The holder shown here was made of copper with a black plastic base. A walnut base would also be very attractive.

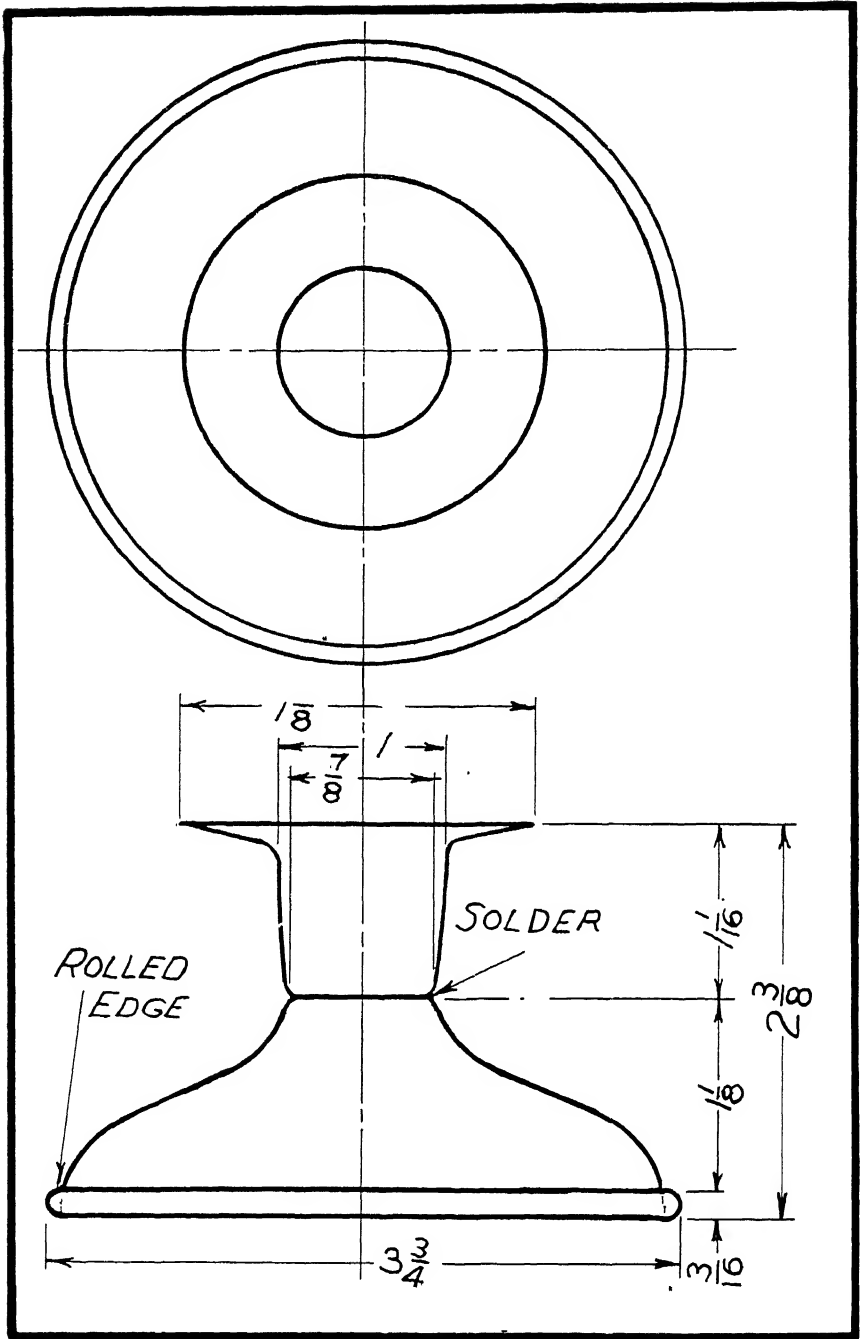
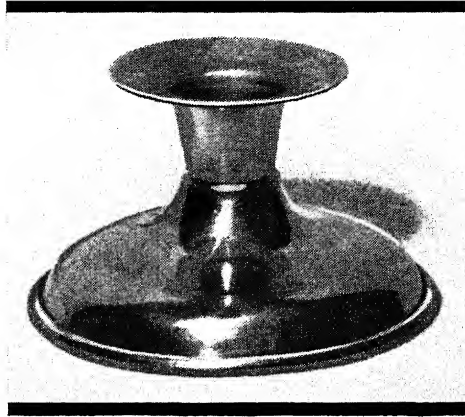


PLATE 11. Candlestick



CANDLESTICK

THIS type of candlestick is along more familiar lines. It is an attractive project, and provides practice in the simpler spinning processes.

The base has a hole in it through which the friction unit fits, thereby eliminating the possibility of its slipping from the lathe. The parts are soldered together through this hole in the base. The top or candle-socket part is spun with a tail block, and should be spun to the chuck to prevent it from breaking away at the tail block. A $4\frac{1}{2}$ -in. disk of 18-gauge pewter or 20-gauge copper is required for the base and a $2\frac{1}{2}$ -in. disk for the top.

When four of these candlesticks are used with the flower or fruit bowl on page 17, they form a most delightful table ensemble.

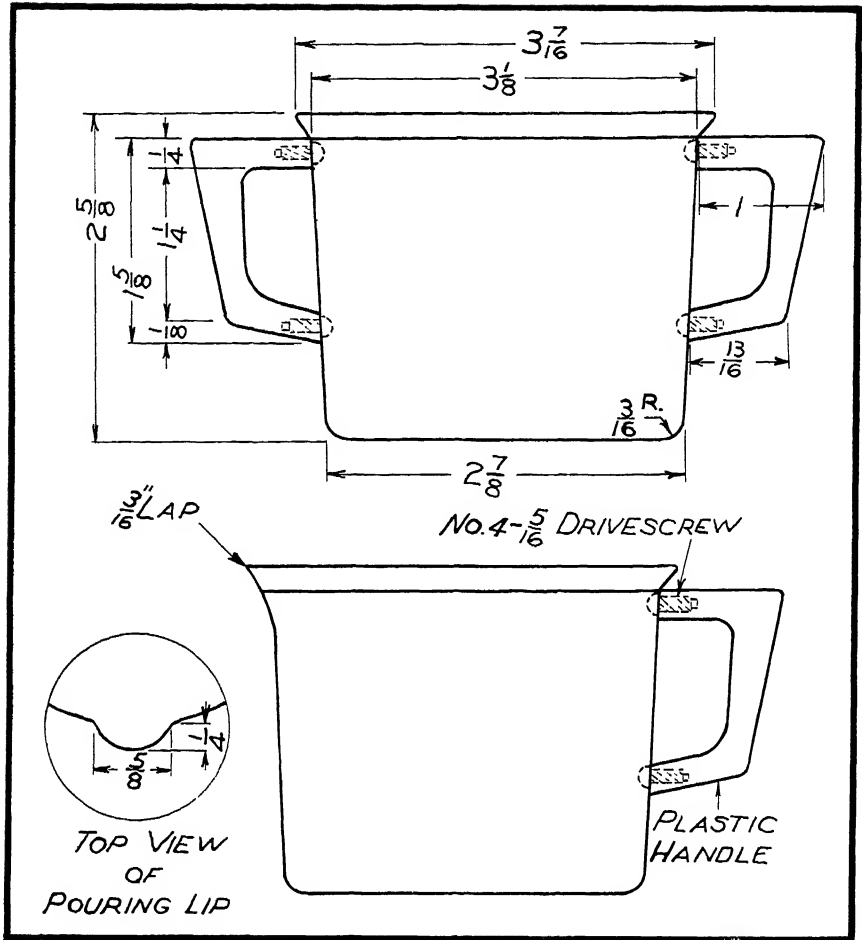


PLATE 12. Sugar and Creamer



SUGAR AND CREAMER

THESE ever popular projects are made more attractive by the addition of the graceful, sturdy handles of plastic.

Each one requires a 6-in. disk of 18-gauge pewter. These are spun firmly to the chuck. The top edge is turned over to form a 3/16-in. lap.

The pouring spout of the creamer is shaped over a block of wood with a dowel rod.

The plastic handles are shaped up and smoothed with a file and emery cloth, after which they are polished to a high luster on a cotton buffing wheel. They are fastened to the body with drivescrews.

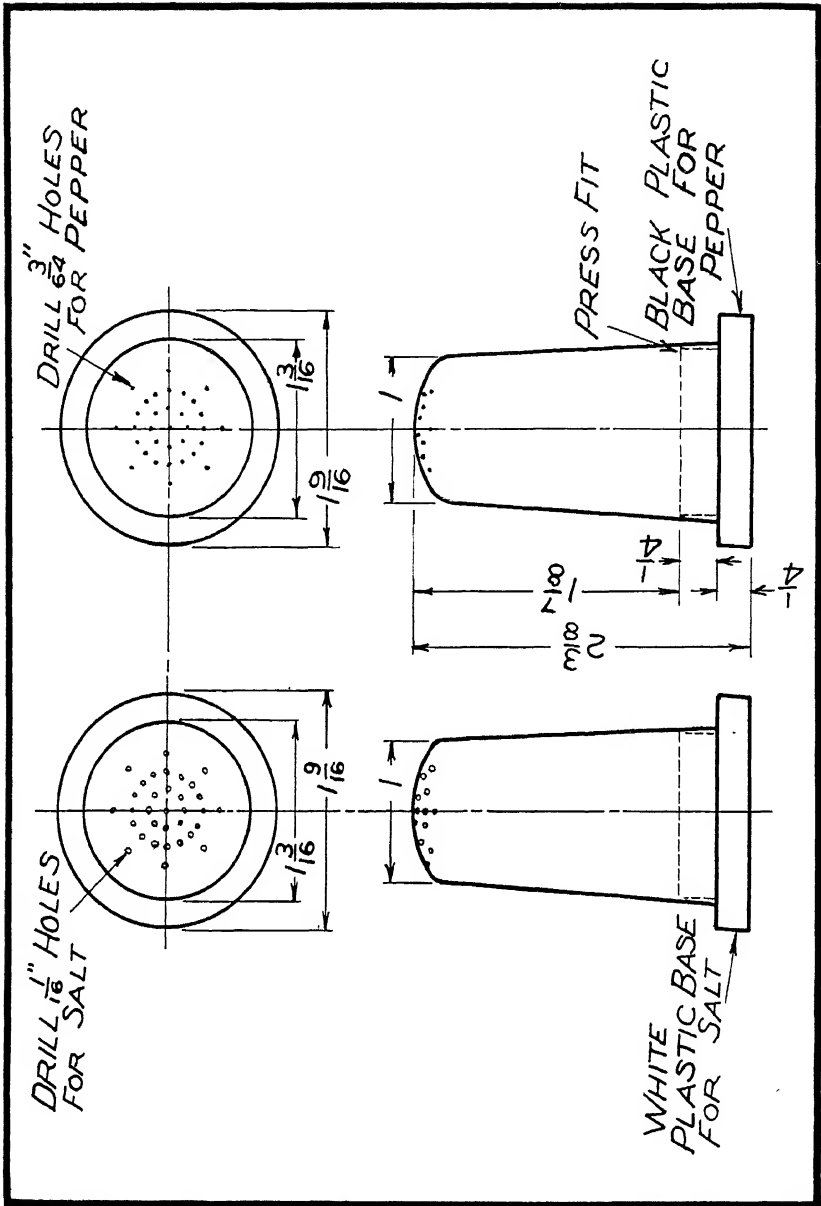
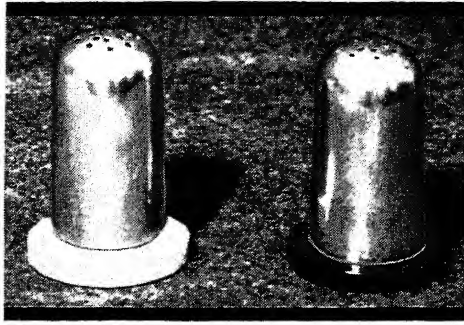


PLATE 13. Salt and Pepper Cellars



SALT AND PEPPER CELLARS

THIS is a project that is really unique in metal spinning. The design is pleasing and attractive, and the project is one of the most popular we are offering. A touch of originality is given by putting a white plastic base on the salt cellar and a black one on the pepper cellar.

This project requires two 3-in. disks of 18-gauge pewter. In the spinning process, the tail block is shaped to match the contour of the top. Pressure is applied on the tailstock after the disk is centered. A little caution and the use of the backstick enables the spinner to spin the shell to the chuck. The holes are laid out and then drilled by hand as shown on the detailed drawing. A universal chuck is used to hold the plastic bases, while they are being turned to size. A press fit is desired so that the friction will hold the shell to the plastic base.

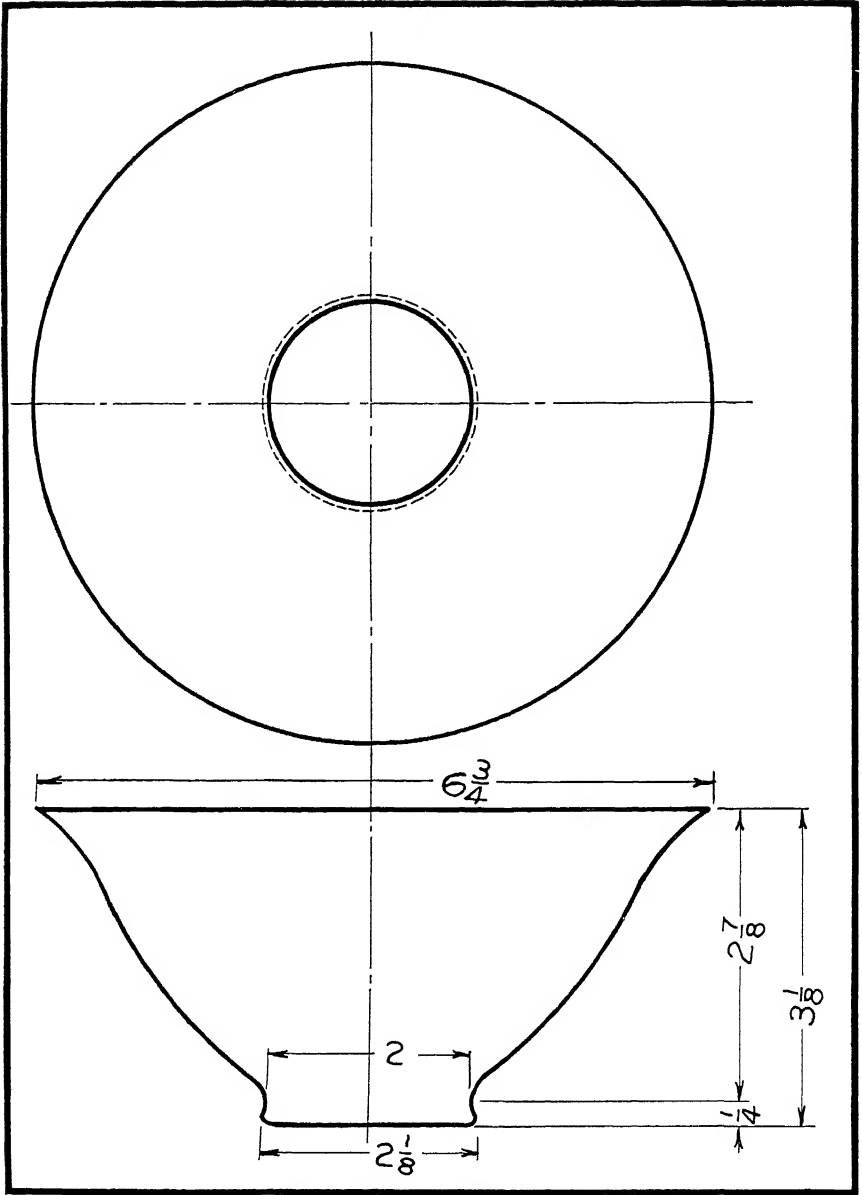
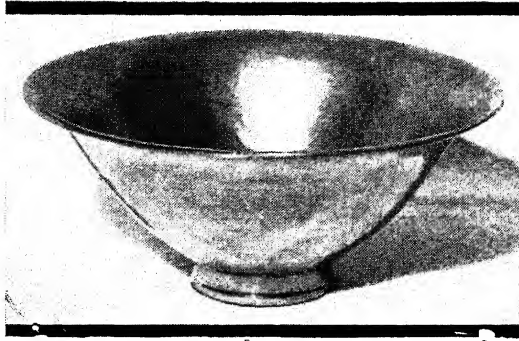


PLATE 14. Nut Bowl



NUT BOWL

WE HAVE always found a bowl to be a favorite project with boys. This one has very definite value as the chuck used is similar to a breakdown chuck, thus giving an introduction to a process that will be used in more difficult projects. An 8-in. disk of 18-gauge pewter or 20-gauge copper is required.

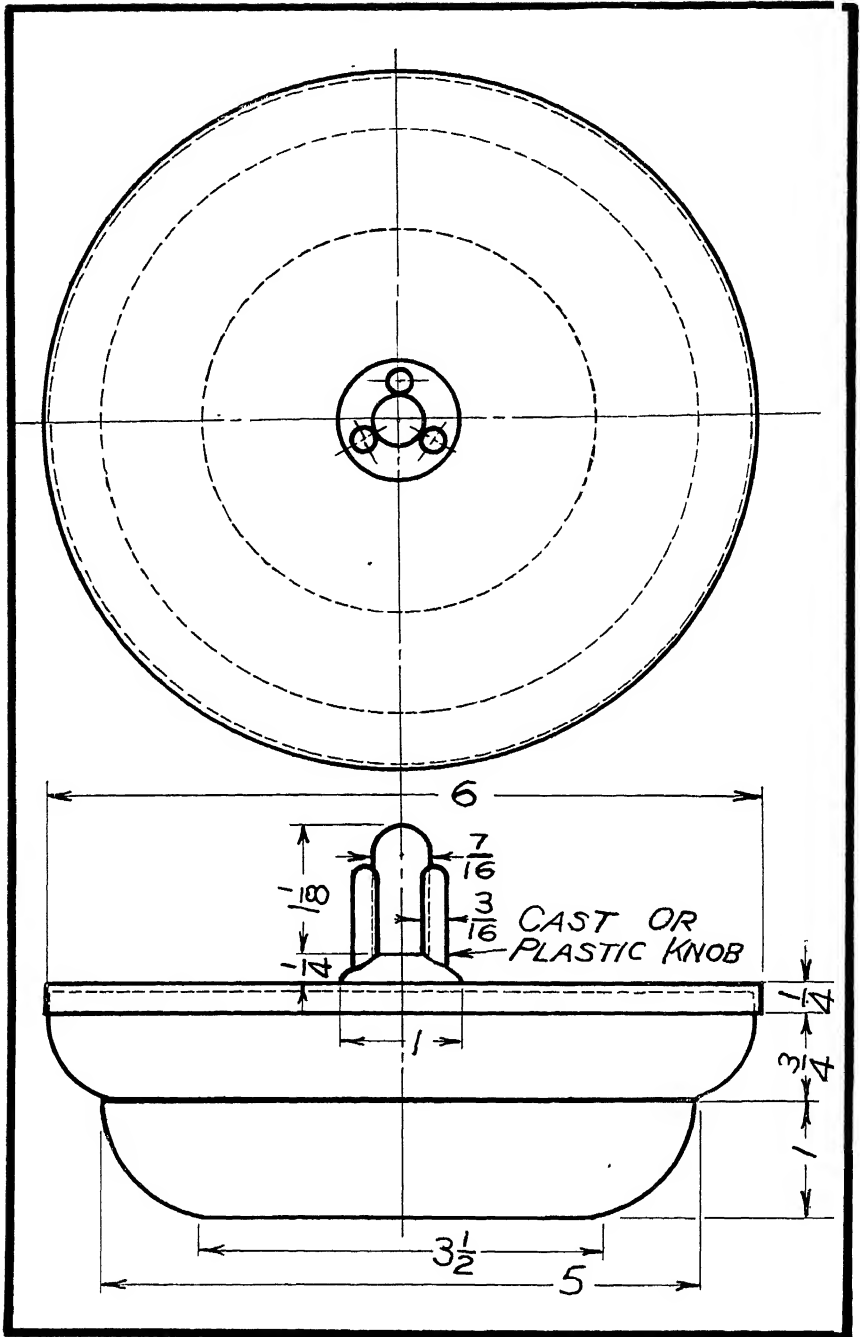


PLATE 15. Bonbonnière



BONBONNIÈRE

ONE of our most decorative, as well as useful, projects is this bonbonnière. The loveliness of copper combined with the amber and white plastic knob makes it an object of real beauty.

The body requires a $7\frac{1}{2}$ -in. disk of metal and the cover a $6\frac{1}{2}$ -in. disk. Eighteen-gauge pewter or 20-gauge copper should be used. The knob may be cast of the same material or may be made of plastic, according to individual taste. Directions for making the plastic knob will be found in the section on plastics.

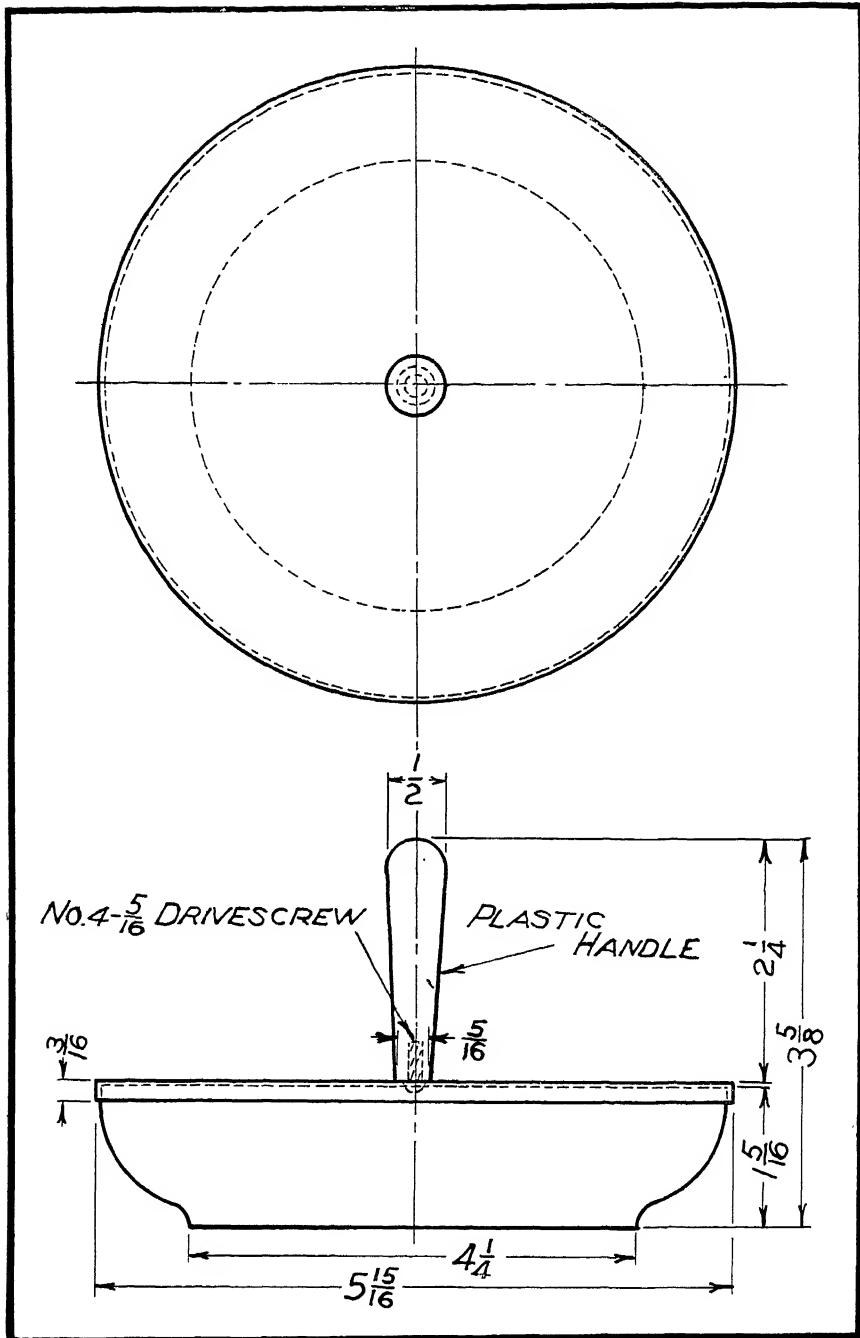
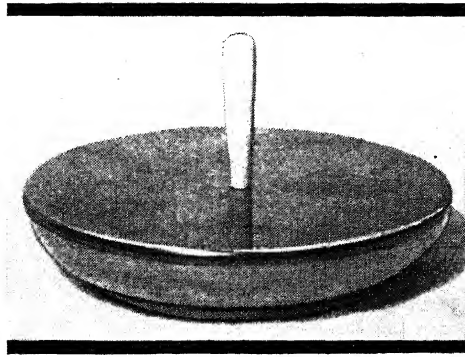


PLATE 16. Bonbonnière



BONBONNIÈRE

HERE is another bonbonnière, smaller but equally as lovely. The severely simple lines of both bowl and handle give it the charm of dignity.

The body requires a $7\frac{1}{2}$ -in. disk of metal and the top a $6\frac{1}{2}$ -in. disk. We suggest the following combinations — 18-gauge pewter with white plastic, 20-gauge copper with amber, or 20-gauge brass with black plastic.

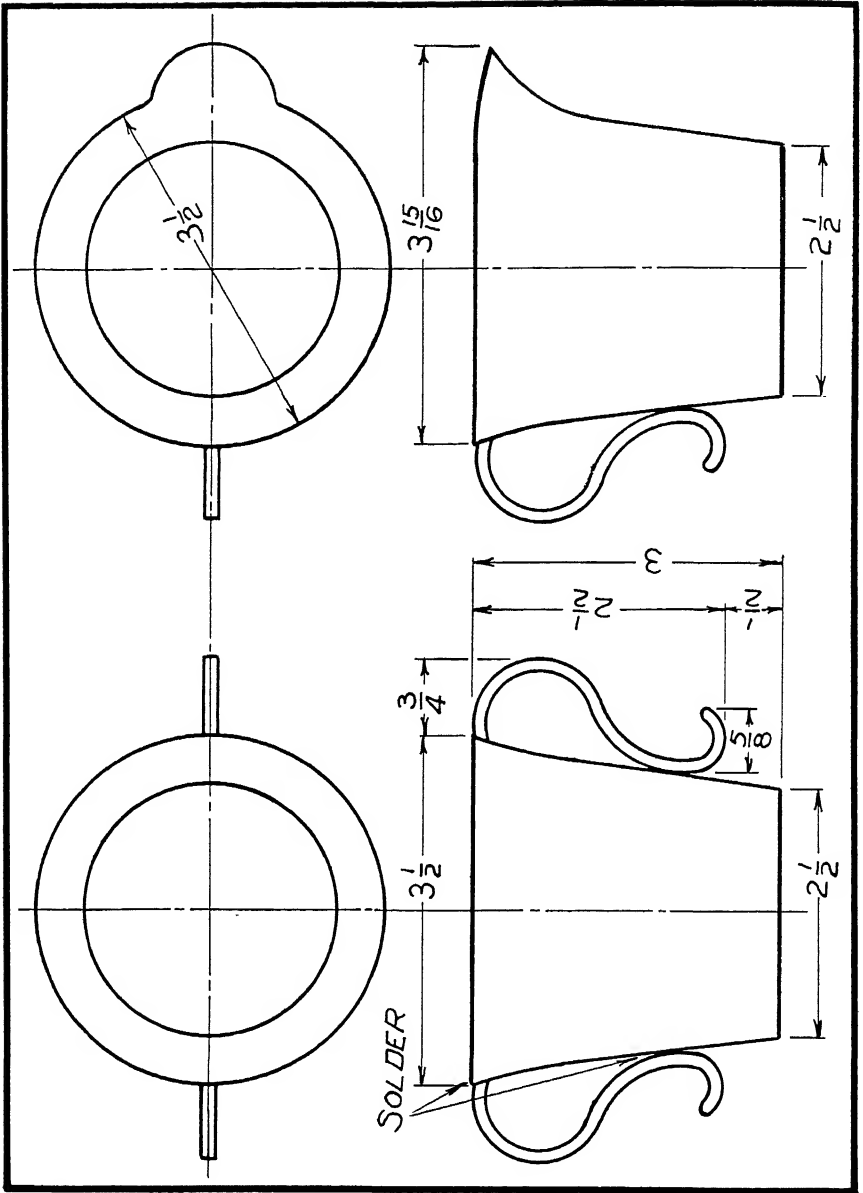
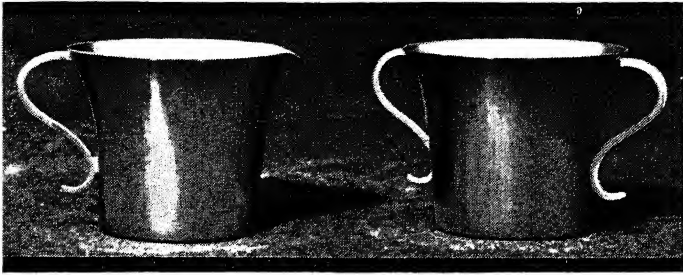


PLATE 17. Sugar and Creamer



PEWTER SUGAR AND CREAMER

THE attractive flare shape and the gracefully curved handles make this set lovely to look at and delightful to make and own.

For these projects 6-in. disks of 18-gauge pewter are required. Care must be taken when spinning them to the chuck, so that the metal will not be stretched too thin. The handles are of $3/16$ -in. square pewter. They are shaped and polished before soldering.

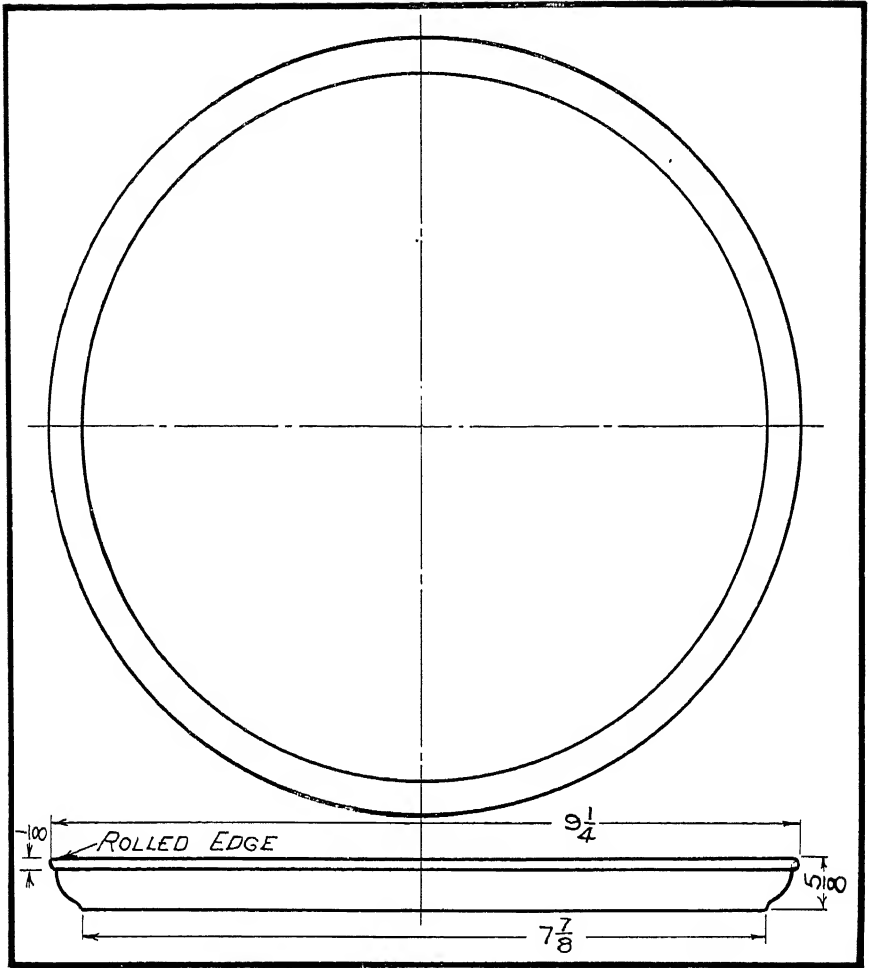
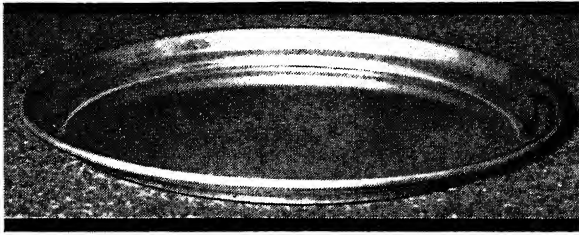


PLATE 18. Tray



TRAY

THIS medium-sized tray requires a distinctive style of spinning. The 10-in. disk of 18-gauge pewter is held against the chuck with a tail block of the same diameter. The edge is then spun to the flowing curves of the chuck.

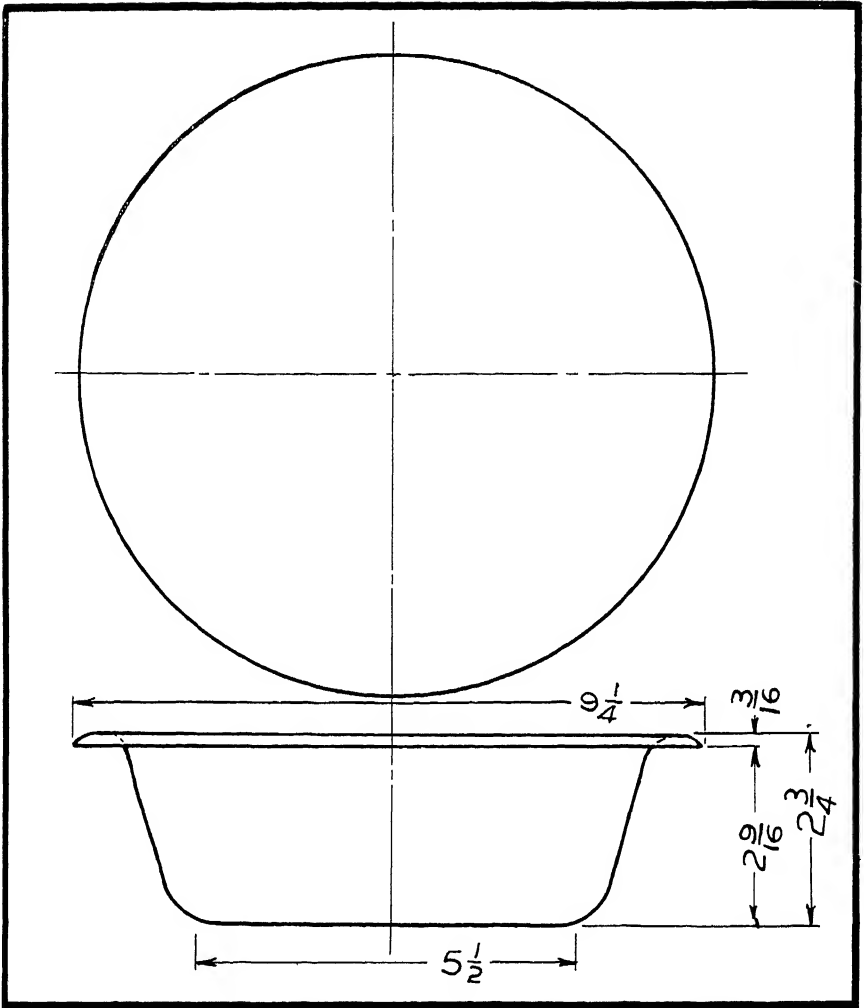
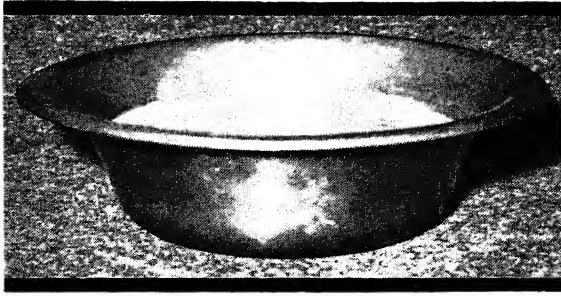


PLATE 19. Salad Bowl



SALAD BOWL

THE simplicity of the lines adds to the charm of this ever useful type of project.

This project requires the almost constant use of the backstick in spinning it to the desired shape. The bowl takes a 10-in. disk of 18-gauge copper or pewter.

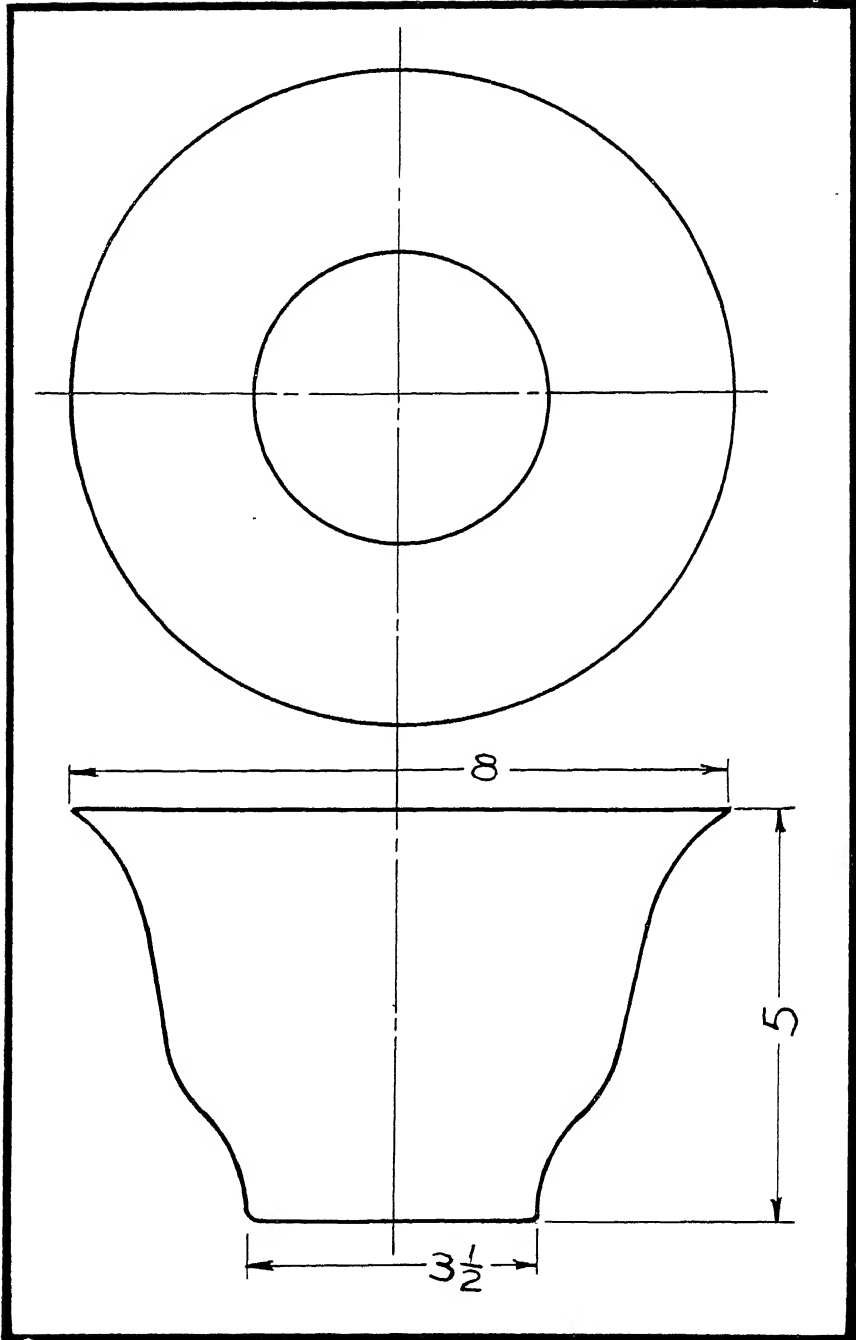


PLATE 20. Jardiniere



JARDINIERE

THIS will prove a very convenient holder for that unsightly flowerpot. The copper or brass tones blend beautifully with all flowers.

The jardiniere requires the use of a breakdown chuck and takes a 12-in. disk of 18-gauge brass or copper. Since this is larger than the usual-sized disk, it will become hard during the spinning process and will have to be annealed several times before it is spun to the desired height.

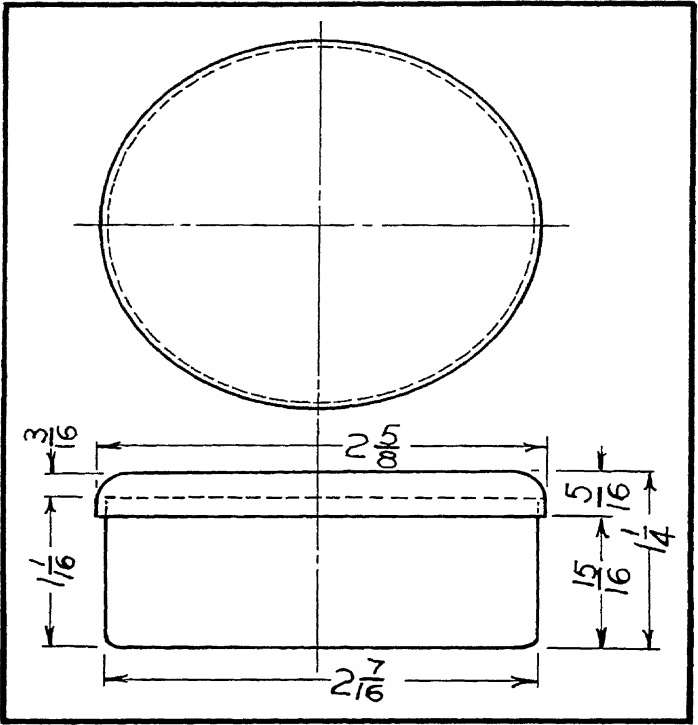
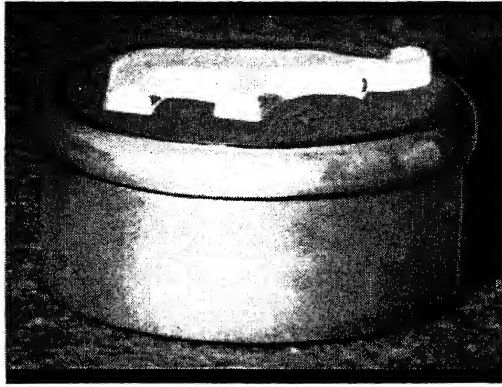


PLATE 21. Trinket Box



TRINKET BOX

THIS little box will bring whimsical loveliness to a lady's dressing table. It is small enough to hold just a few precious trinkets. The cover may be decorated with her initial or her favorite hobby. The one pictured is made of 18-gauge pewter and is ornamented with a plastic elephant. The body of the box requires a 4-in. disk and the cover a $2\frac{1}{2}$ -in. disk.

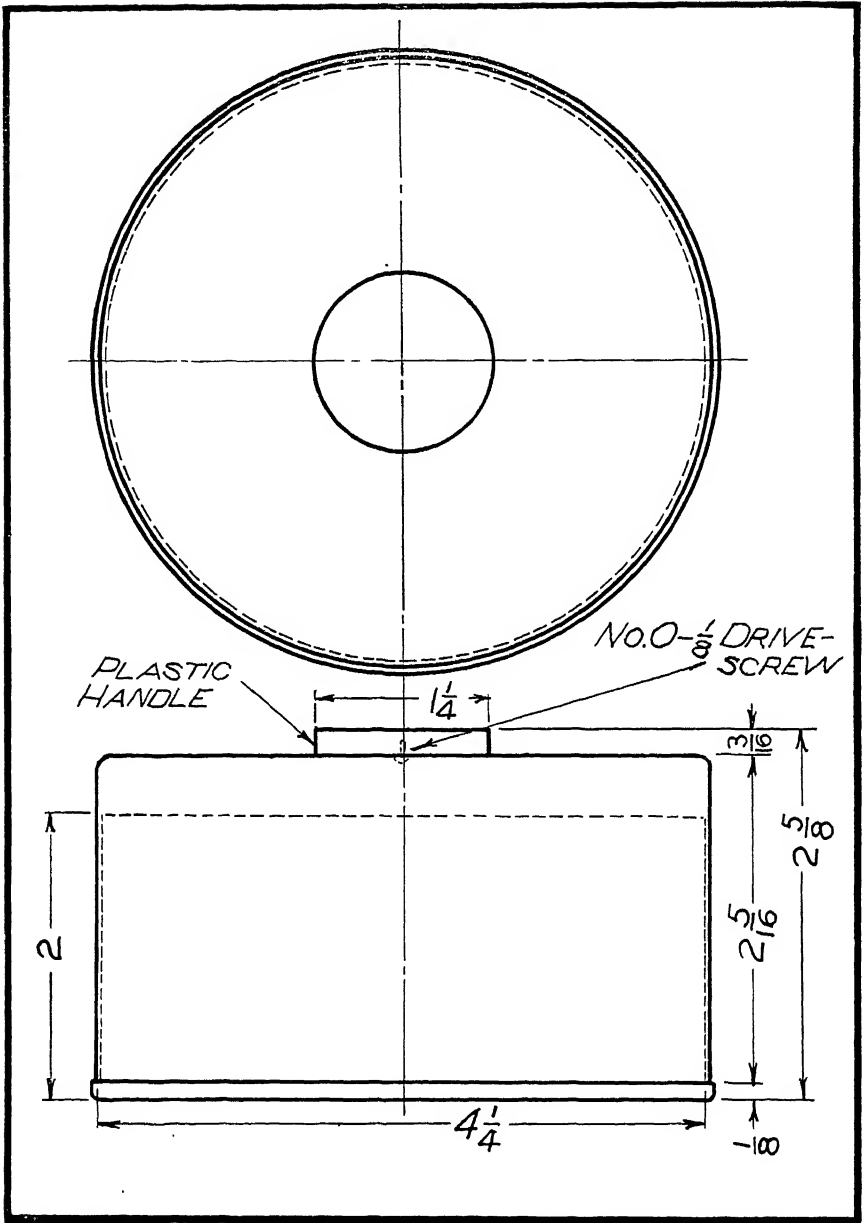
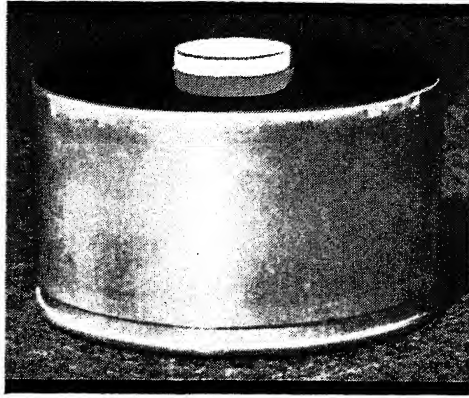


PLATE 22. Powder Box



BATH-POWDER BOX

THIS powder box makes a delightful accessory for the bathroom. The plastic knob on the pewter box may be any color that blends with the decorative scheme of the room.

This project provides the student or craftsman with problems in spinning not often met. The cover is spun to the depth of the box, however it must be spun a little larger so it will fit snugly over the box but still be easy to remove. An 8-in. disk of 18-gauge pewter is used for both.

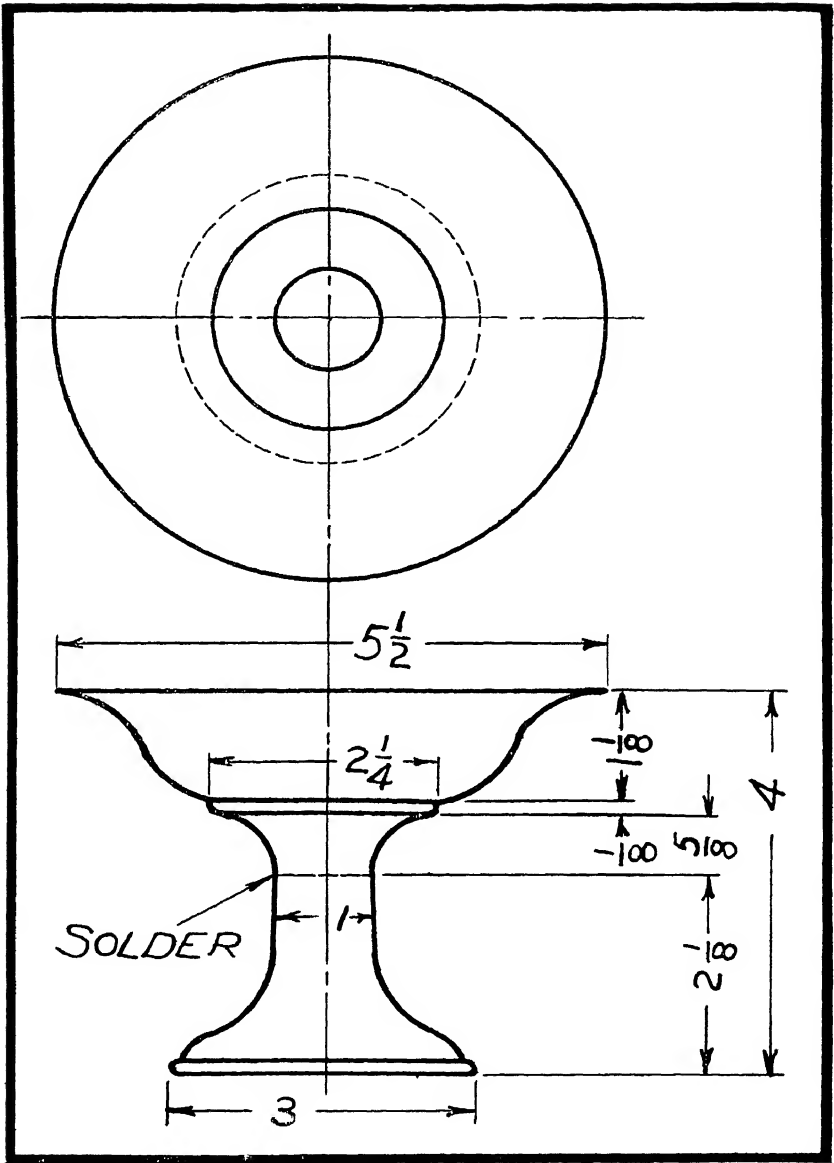


PLATE 23. Comport



COMPORT

THIS is another perennial favorite. Made of pewter, it blends with any table service, or if copper is used, the warm tones make it a most attractive accessory for the living room.

It is made in two parts of 18-gauge pewter and soldered together, but when buffed and polished, it gives the appearance of one piece. The bowl requires a 6-in. disk, while the base takes a 4-in. disk. The bottom edge of the base is rolled.

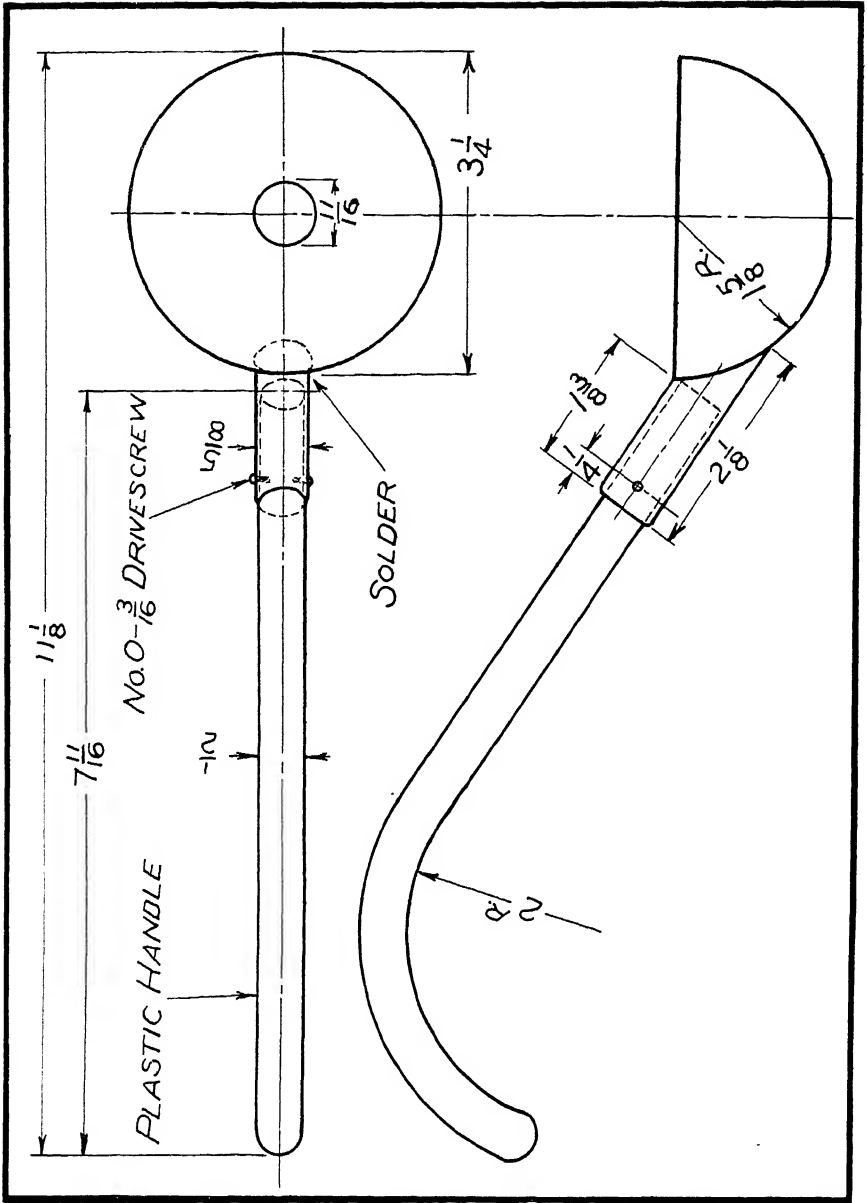


PLATE 24. Punch Ladle



PUNCH LADLE

THIS unusual project has a distinctive charm all its own. While the bowl is not hard to spin, the plastic handle is tricky to shape, but the full directions in our chapter on plastics will clear up any doubt in your mind as to your ability to make it.

The bowl is easily spun from a 4-in. disk of 18-gauge pewter and the ferrule is fitted and soldered to it.

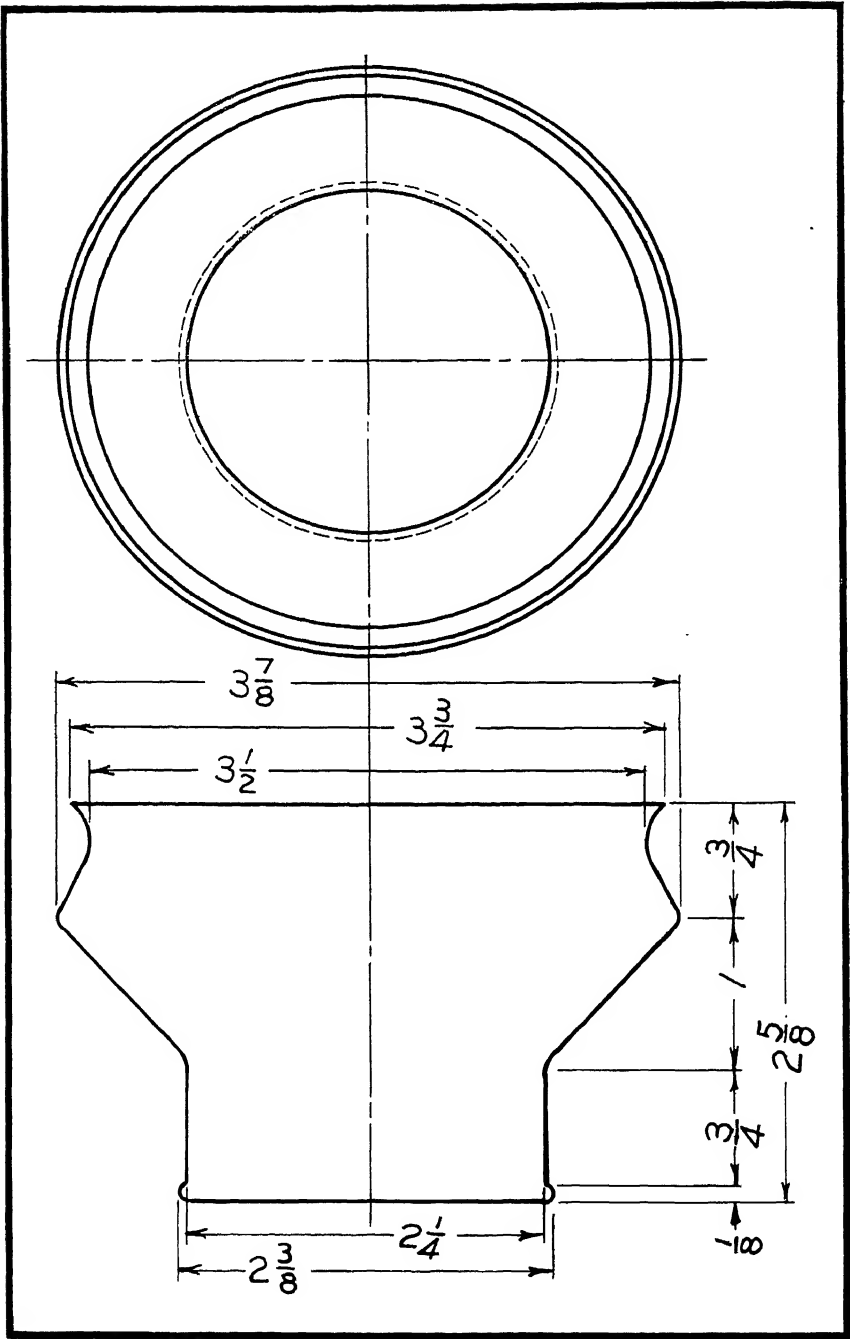


PLATE 25. Vase



VASE

THE unusual shape of this small vase gives it decorative charm.

This project requires careful spinning as only parts of the metal are spun to the chuck, the remainder of the spinning is done in the air. A 6-in. disk of 18-gauge pewter is needed for spinning this vase.

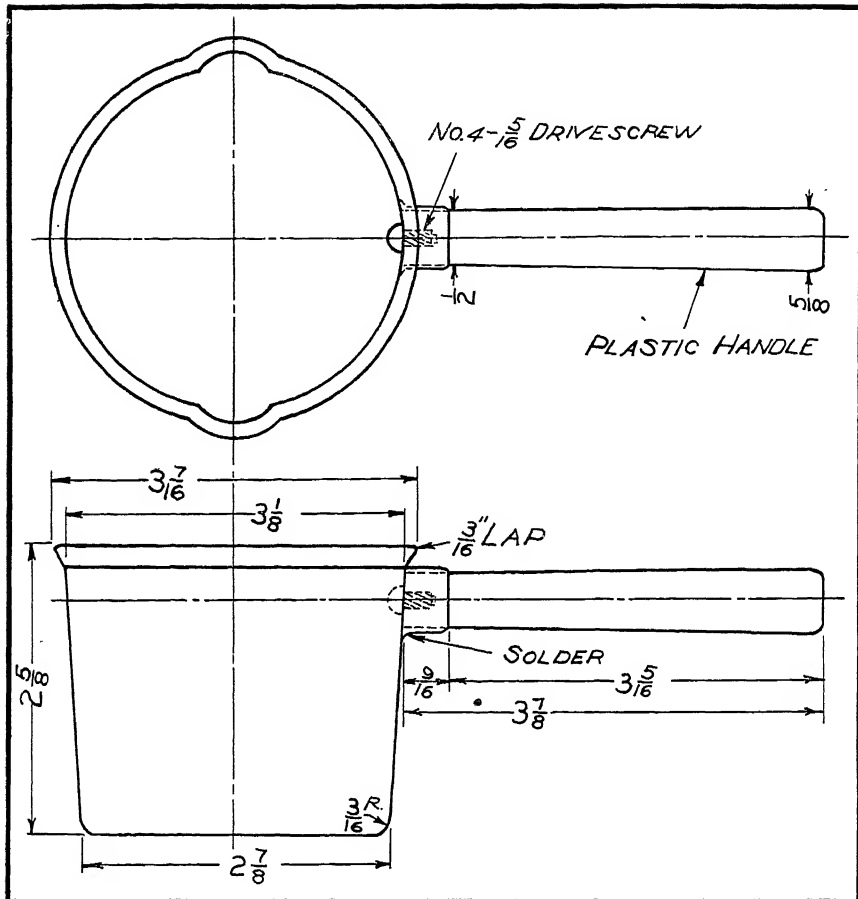
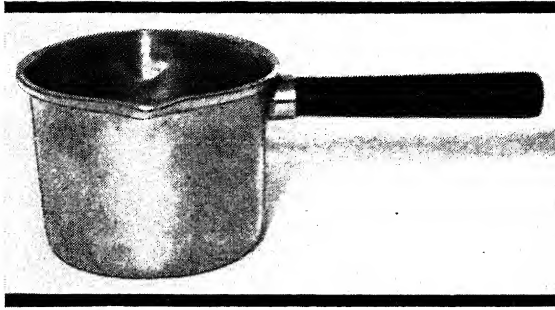


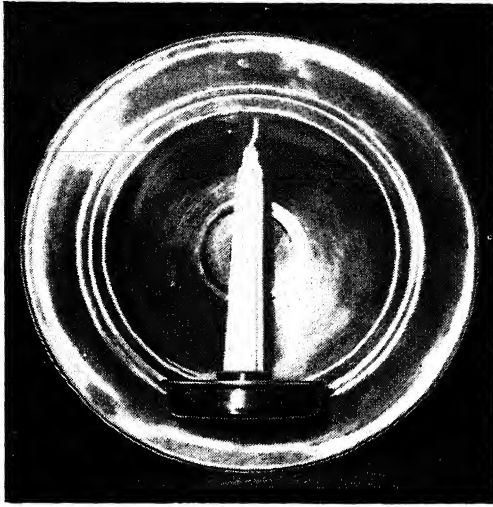
PLATE 26. Hot-Sauce Server



HOT-SAUCE SERVER

THIS useful container will be welcomed by all housewives. A copper one with an amber plastic handle or pewter with either a black or a white plastic handle make beautiful combinations. We suggest using it with the small plate shown on page 81.

It requires a 6-in. disk of 18-gauge pewter. The spinning process is the same as that used for the sugar and creamer on page 31. A pewter ferrule is soldered to the body, then the plastic handle is fitted into it and fastened securely to the body with a drivescrew.



CANDLE SCONCE

ANY lover of colonial influence will be delighted with the beauty and the quiet charm of this candle sconce. It is equally beautiful in either polished brass or copper.

It is made in three parts — the reflector, the cup, and the candleholder. In order to get the correct contour of the reflector, it is necessary to anneal it. The cup and candleholder are spun more easily. The cup is cut with tin snips and fitted to the reflector with laps, so it may be soldered on the reverse side. The candleholder is soldered to the center of the cup.

The reflector requires a 10-in. disk of 20-gauge brass or copper; the cup, a 4-in. disk, while the candleholder takes a 2½-in. disk of metal.

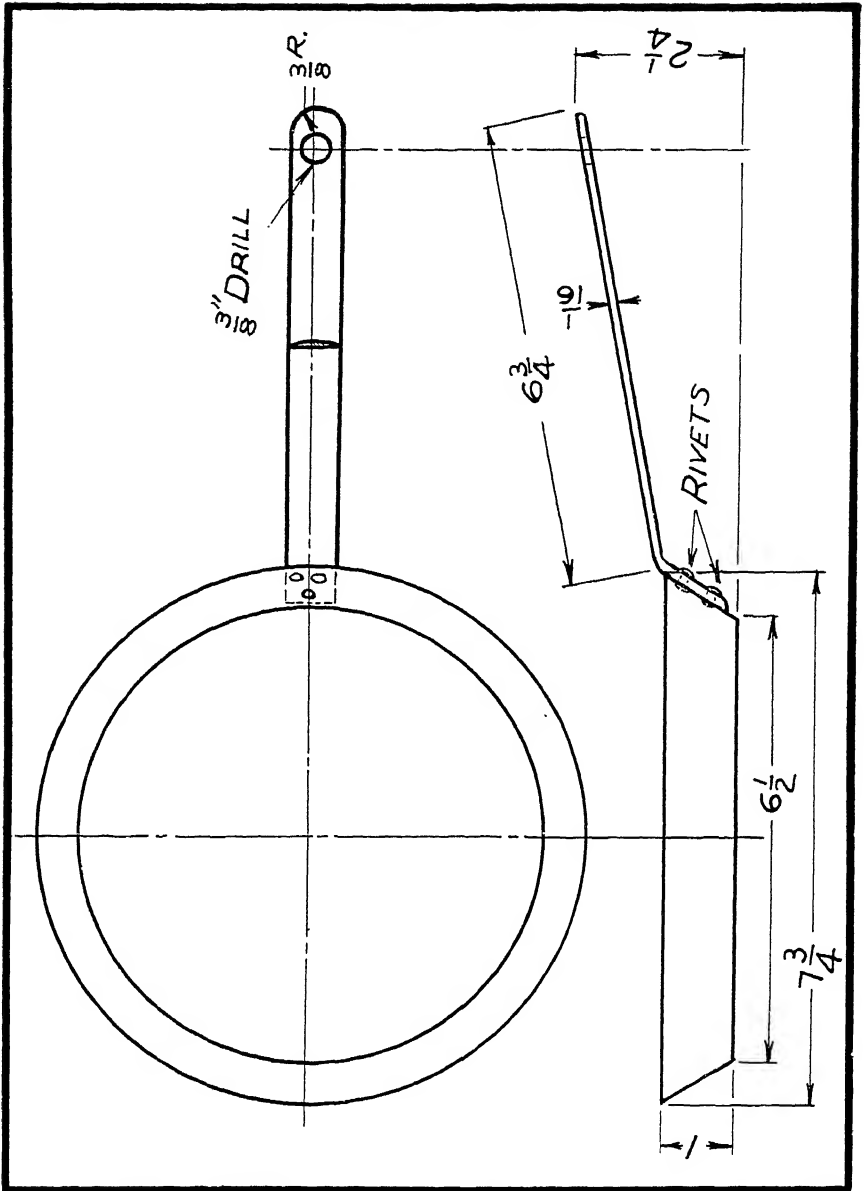
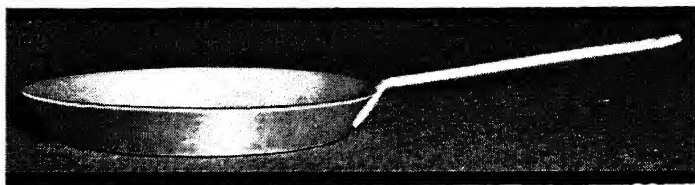


PLATE 28. Frying Pan



FRYING PAN

FOR the boy the next three projects, which comprise a complete cooking outfit for camping or hiking, will be a pleasure to make.

The first, the frying pan, is made from an $8\frac{1}{4}$ -in. disk of 14-gauge aluminum. The handle is also of aluminum and is fitted to the pan and riveted in place.

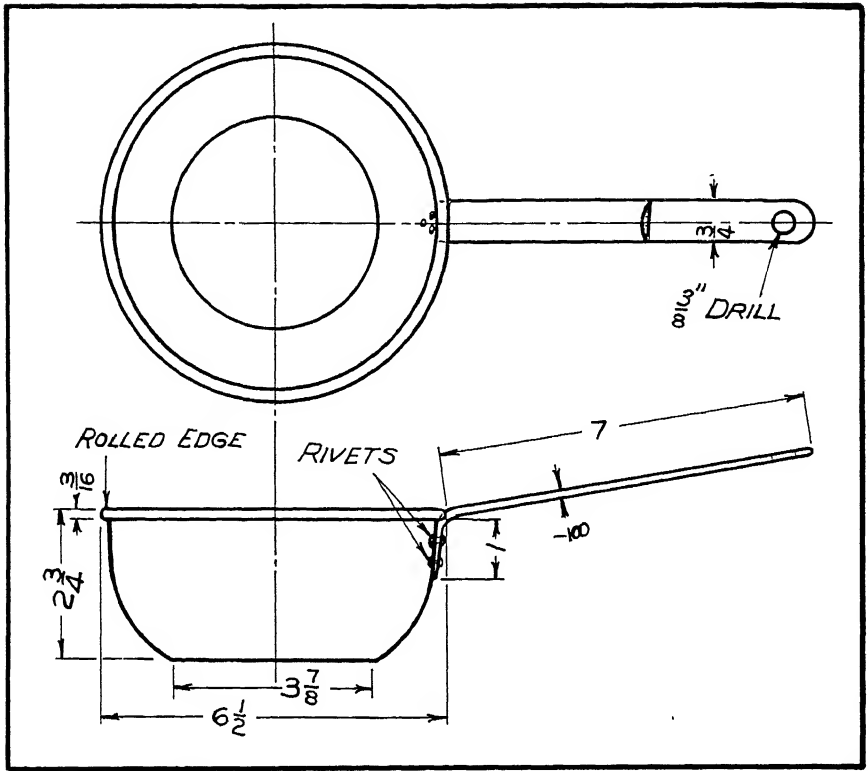


PLATE 29. Saucepan



SAUCEPAN

HOW much better that food is going to taste, when cooked outdoors in a pan like this.

The saucepan requires an $8\frac{1}{2}$ -in. disk of 20-gauge aluminum and the handle is fastened to it by rivets. The top edge is rolled with either the backstick or beading tool.

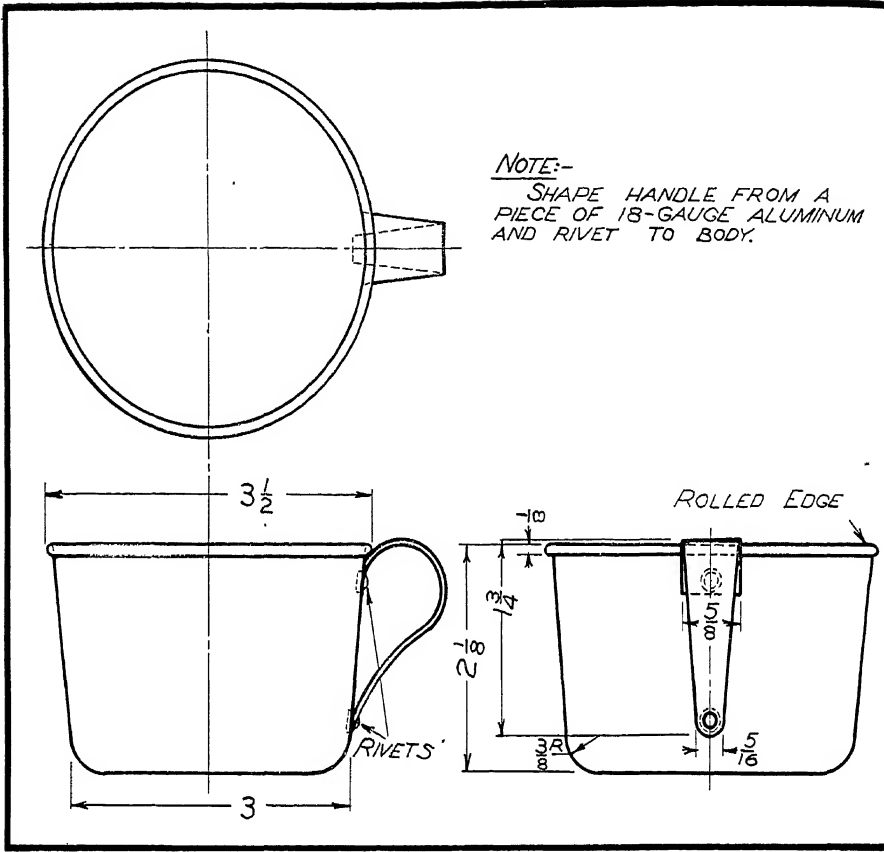


PLATE 30. Cup



CUP

THE last project of the set is the drinking cup. This is spun from a $6\frac{1}{2}$ -in. disk of 20-gauge aluminum. The handle is shaped from a piece of 18-gauge aluminum and then riveted to the body of the cup.

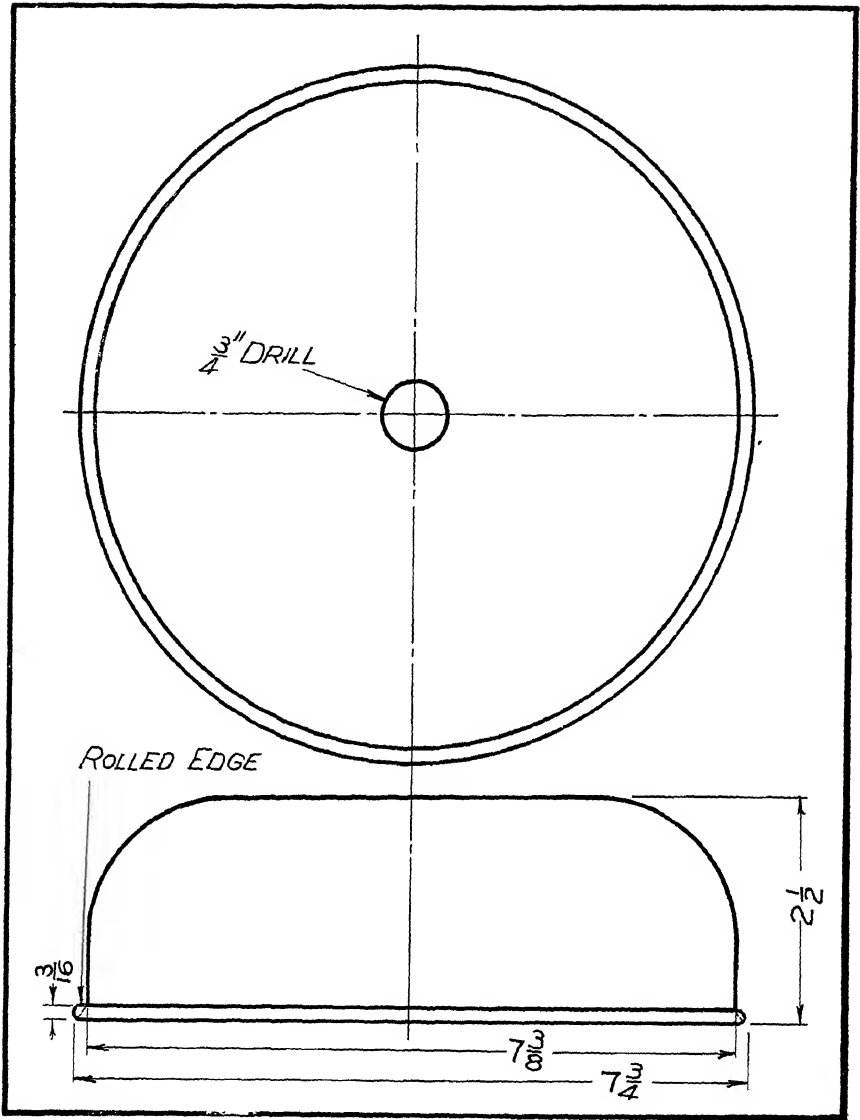
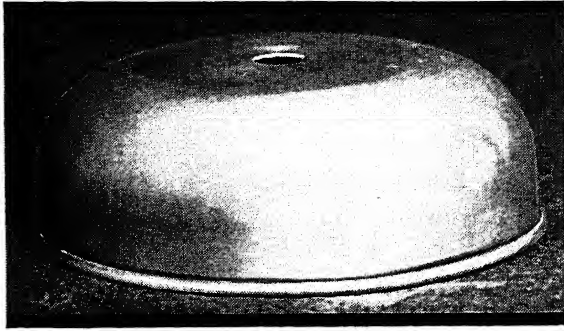


PLATE 31. Hot-Cake or Toast Cover



HOT-CAKE OR TOAST COVER

PERHAPS one of our most practical projects is this hot-cake or toast cover. It will be found most invaluable for the breakfast table.

It is made of a 10-in., 20-gauge aluminum disk. The hole in the top not only prevents sogginess, but also facilitates handling.

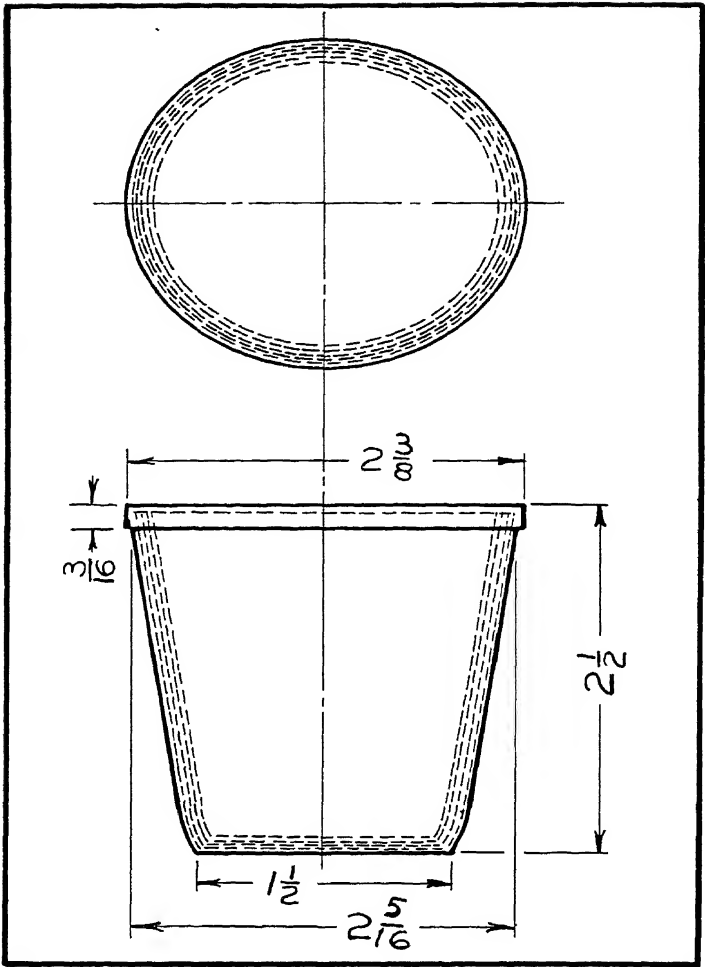
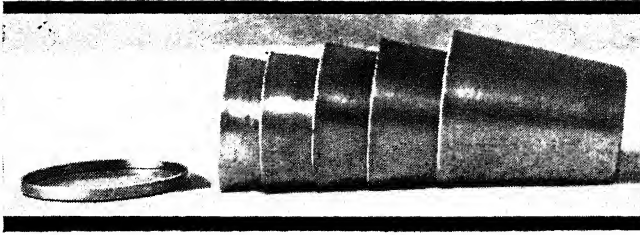


PLATE 32. Nest of Cups

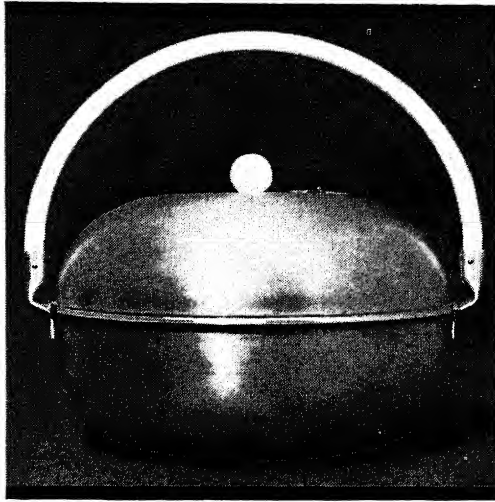


NEST OF CUPS

WHAT boy will not feel a possessive pride in this nest of fine cups? They are small enough to carry in his pocket. What a thrill he will get from the surprise on the faces of the gang, when he opens them and can offer each boy a cup. It is almost magic.

They are made of $4\frac{1}{2}$ -in., 22-gauge aluminum disks. Considerable care must be taken in the spinning of these cups, as they are spun one on top of another and as each cup must not be spun too tightly on the preceding ones.

The backstick is used in this spinning, backing up the tool to prevent wrinkling. The cover is spun to size, so it will snap on the largest or outside cup.



BUN WARMER

THIS is one of our most practical and useful designs. It can be used for reheating buns or muffins, freshening leftover baked goods, keeping toast warm, and numerous other things. The vent in the cover permits crisping or freshening. Anyone making this will find it received with open arms.

In spinning the shells 20-gauge aluminum is the material used. A 14-in. disk is needed for the body and a 12-in. disk for the cover. The ears for the handle are riveted to the body. The plastic handle is heated in hot water and then bent to the required size. It is fitted into the ears and fastened with drivescrews.

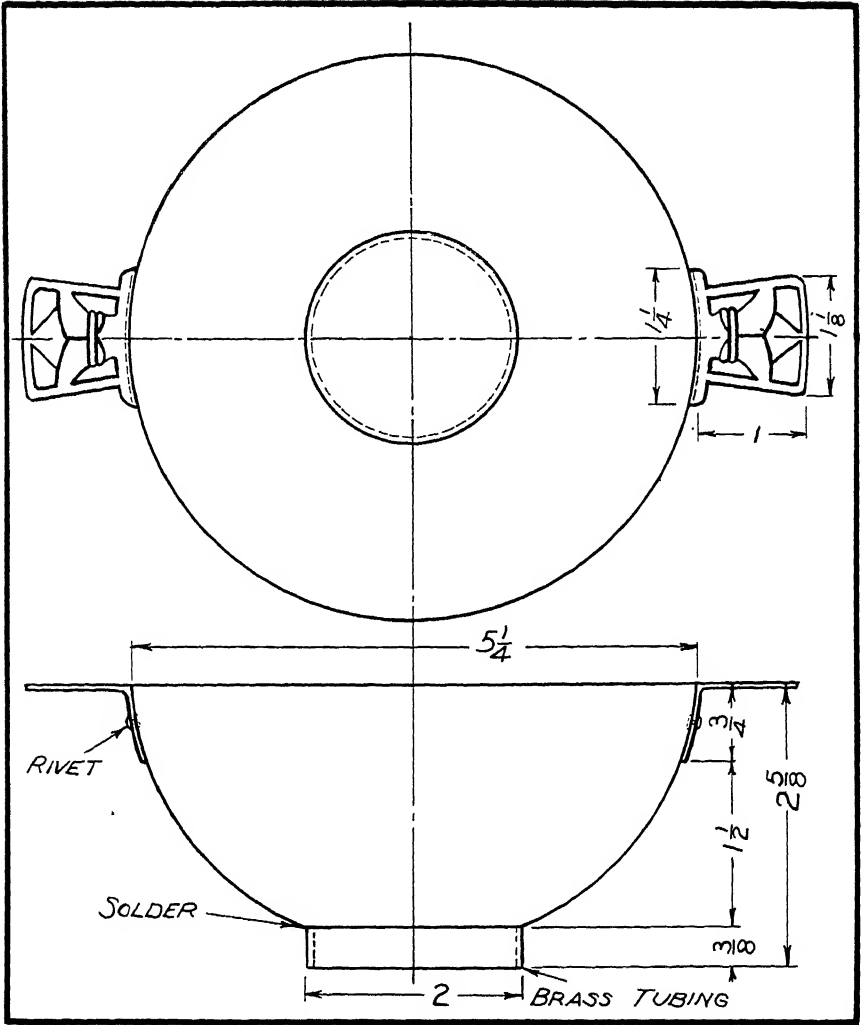
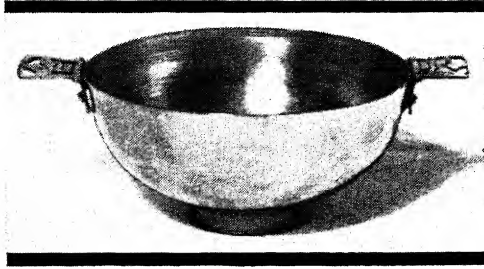


PLATE 34. Candy Bowl



CANDY BOWL

THE attractiveness of this bowl is accented by the use of contrasting metals. Pewter with brass is especially effective. In addition to the spinning process in making this bowl, practice is given in piercing, chasing, and soldering.

The shell for the body requires a $6\frac{1}{2}$ -in. disk of 18-gauge pewter. The base is a piece of 2-in. tubing and the handles are cut from 20-gauge brass.

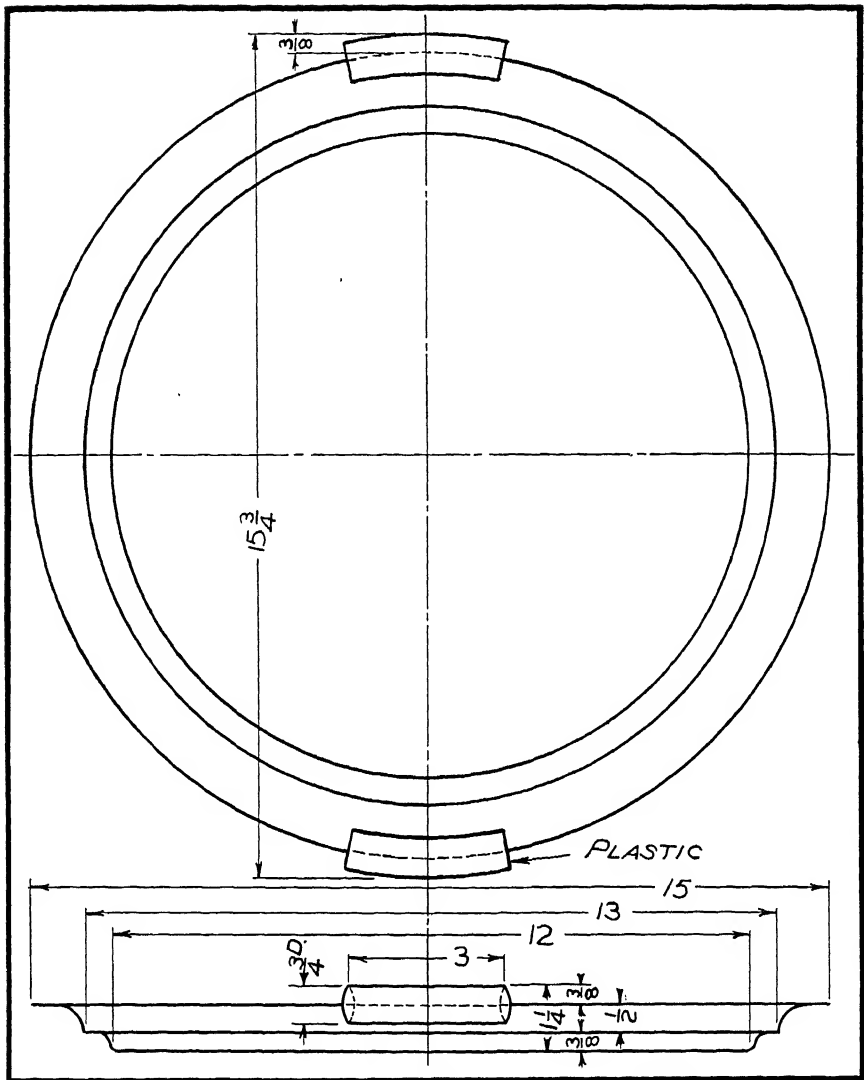


PLATE 35. Large Serving Tray



LARGE SERVING TRAY

THIS tray, exquisitely simple in design, is both lovely and useful. The plastic handles not only add to its beauty but facilitate handling as well.

It is not an easy project to spin, but is valuable as it gives experience in spinning a flat surface with a large diameter. It is very essential that the tail block have the same diameter as the base of the tray, so that the material will not spring out of shape during the spinning process. This project requires a 15-in. disk of 20-gauge copper or Galalloy.

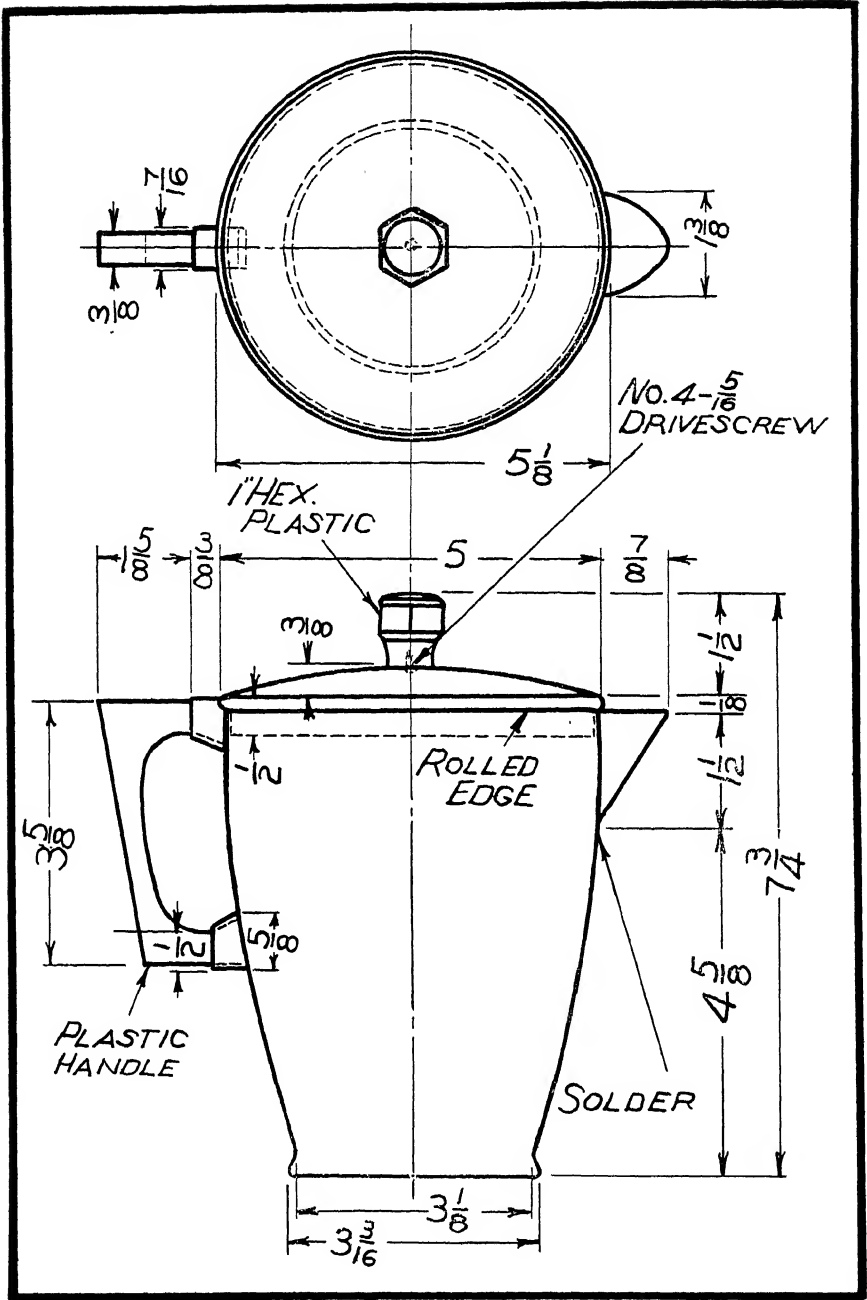


PLATE 36. Coffee Server



COFFEE SERVER

SIMPLE lines, strong in grace, make this project a real work of art. This server with the pewter and black plastic sugar and creamer on page 31 will be a coffee service that will delight the most exacting hostess.

The 12-in. disk of 16-gauge pewter used in making this project must first be spun over a breakdown chuck. The bottom edge is not spun to the chuck but flares out forming a base. The cover is spun in the same manner, so that a flange may be formed to prevent the lid from slipping into the body. The pouring spout is fitted to the server before soldering, and the pewter ferrules are first shaped to fit the handle and then soldered to the body.

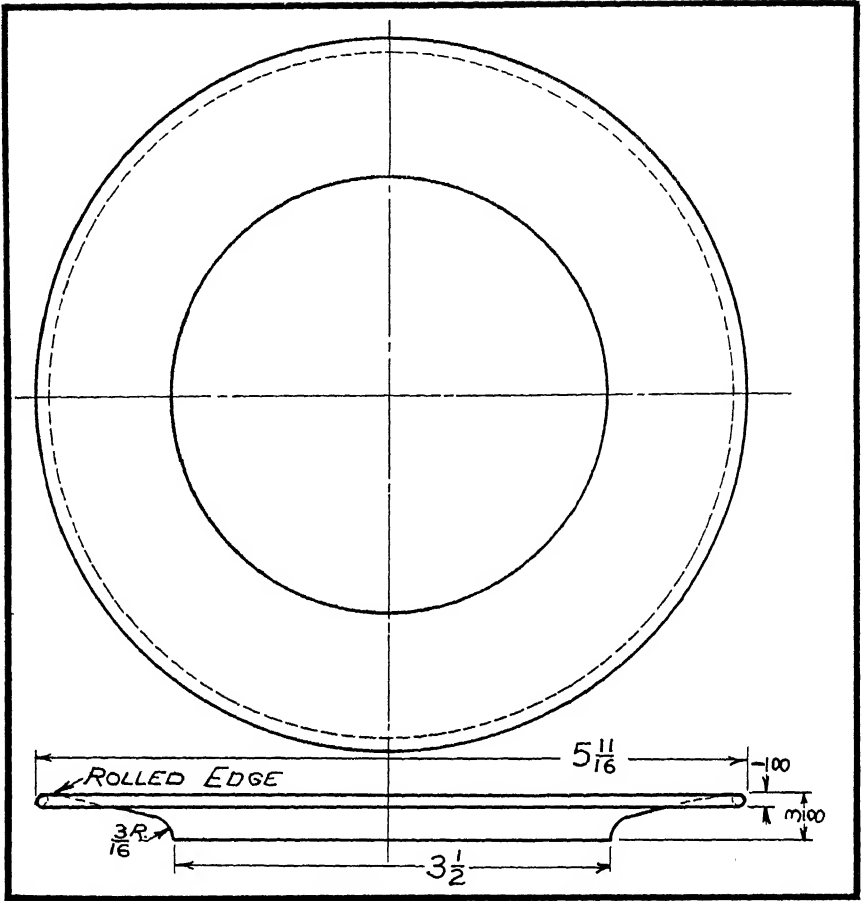
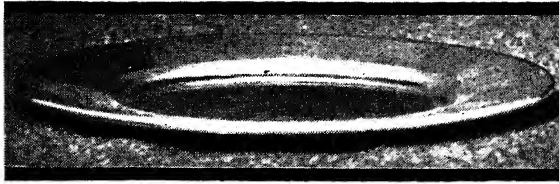


PLATE 37. Bread and Butter Plate



BREAD AND BUTTER PLATE

ANYONE possessing a set of pewter bread and butter plates will feel that they have a table service de luxe.

The spinning process is very easy as the plate is very shallow. It requires a 6-in. disk of 18-gauge pewter.

Your attention is called to the rolled edge, which may be made with either the backstick or beading tool.

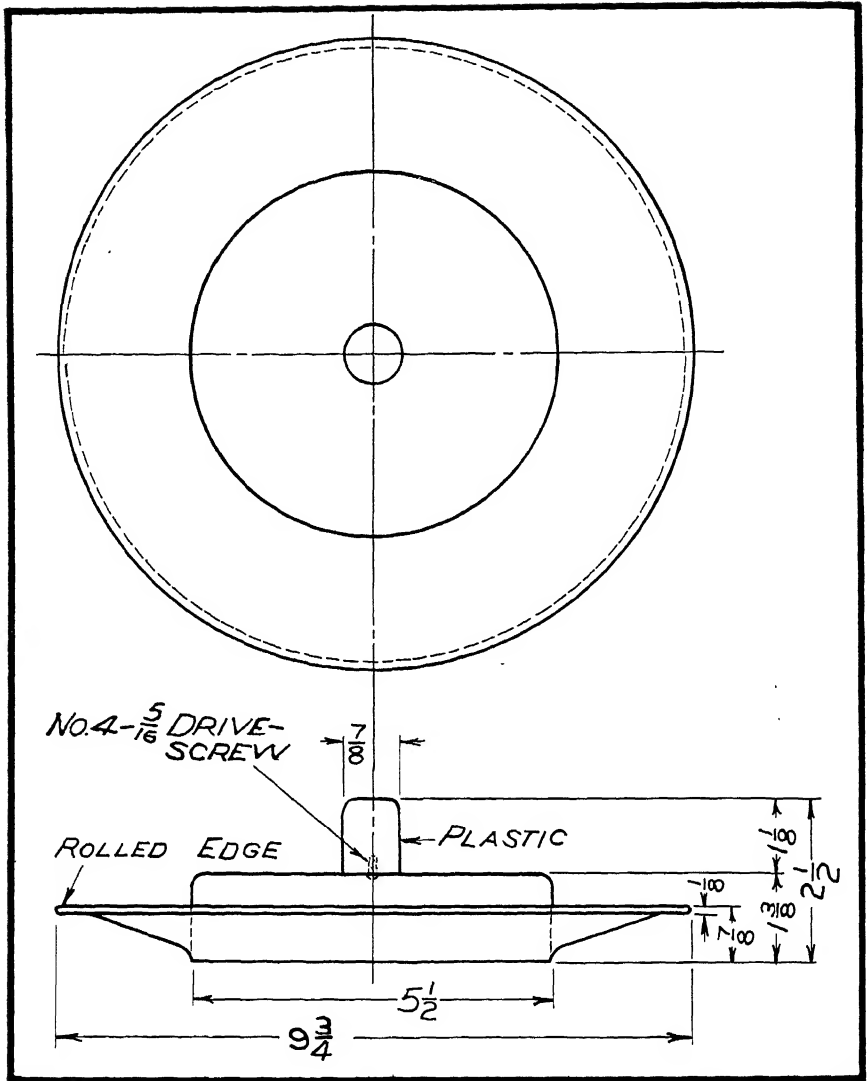
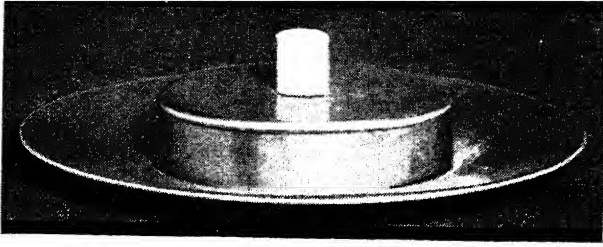


PLATE 38. Cracker and Cheese Dish



CRACKER AND CHEESE DISH

THE careful execution of a fine design attracts the eye to this lovely cracker and cheese dish. The plate flares slightly so the crackers will not slide off, and the cheese compartment has a cover topped with a plastic knob.

The plate takes a 10-in. disk of 18-gauge pewter, while the cheese cover is spun from an 8-in. disk.

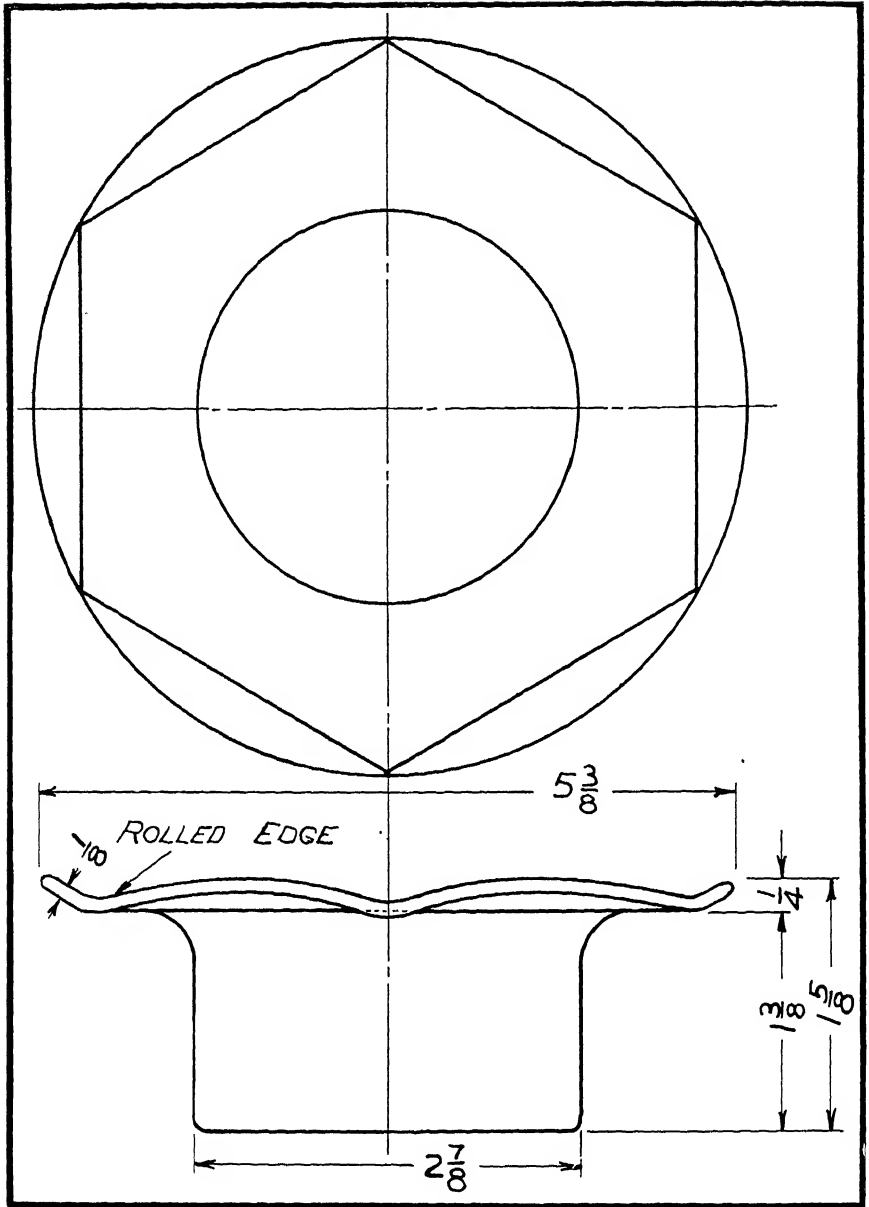
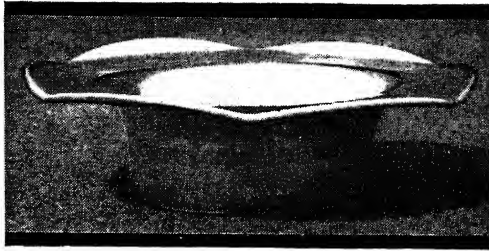


PLATE 39. Candy Dish



CANDY DISH

THIS little candy dish has individuality given to it by its unusual contour.

The material must be spun to the chuck at the beginning of the spinning process, so it will not break as the outer edge is being spun to shape.

The flared rim has a rolled edge that is shaped over a block with a mallet to the required dimensions.

A $6\frac{1}{4}$ -in. disk of 18-gauge pewter or 20-gauge copper will be sufficiently large for this project.

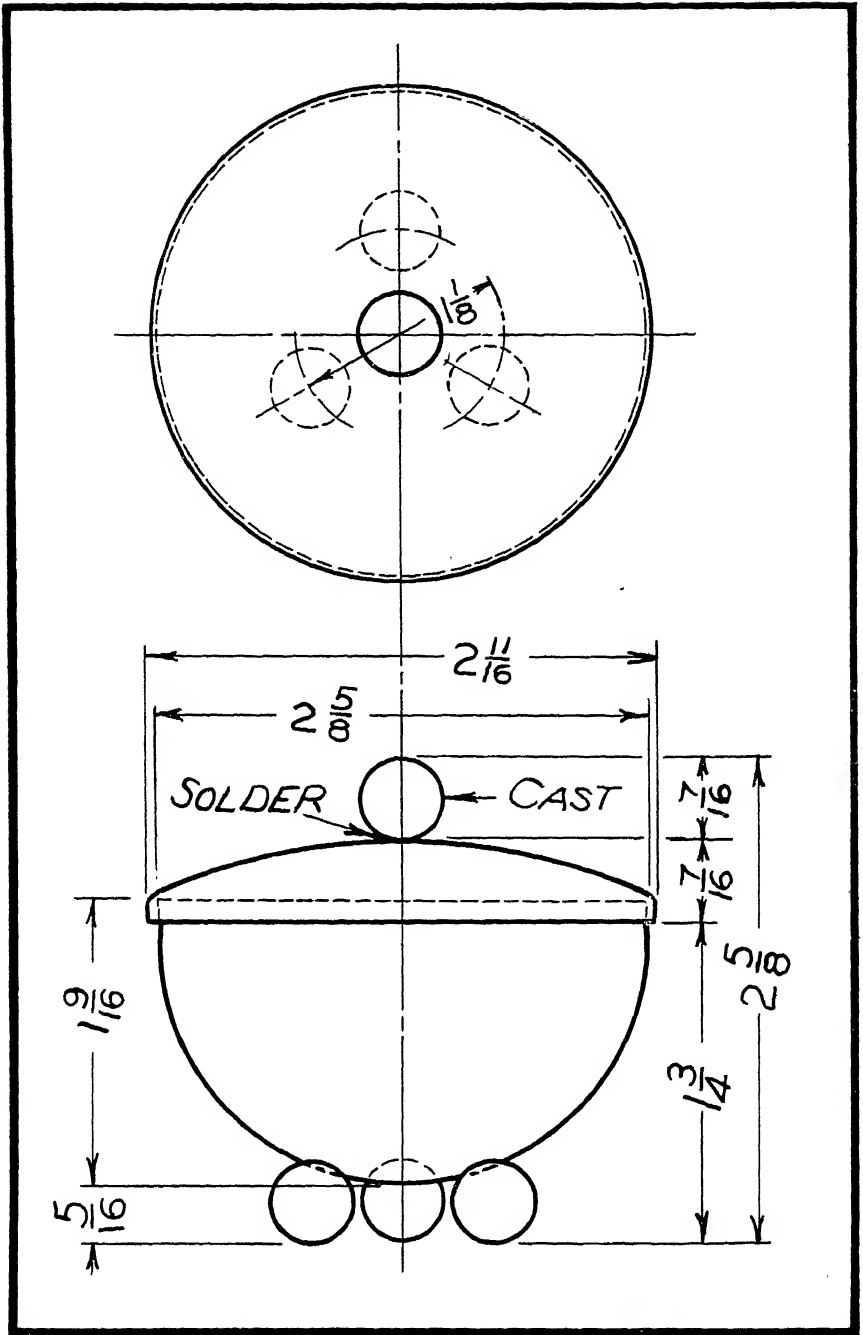


PLATE 40. Jewel Case

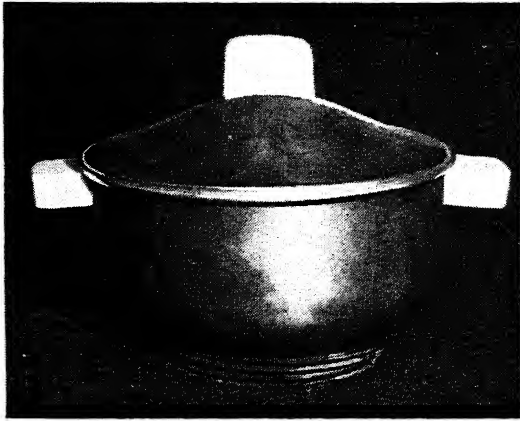


JEWEL CASE

THIS dainty, footed project is just large enough to hold a few treasured trinkets. Though very small, it requires considerable skill to spin. Both the body and cover have to be held to the chuck with a small tail block, and care must be taken so the metal will not flow back over it.

A 4-in. disk of 20-gauge copper or pewter is used for the bowl and a 3-in. disk for the cover.

The knob and feet may be made of plastic and fastened by drivescrews, but if metal balls are used for the knob and feet, they must be soldered in place.



RELISH DISH

WE ARE calling this a relish dish, but it is large enough to be used as a covered vegetable dish if desired. It is made of pewter and has a white plastic knob on the lid, and white plastic handles of similar design are fastened to the bowl with drivescrews.

This is one of our more difficult projects and requires some skill and experience. Due to the height of the bowl, which takes an 8-in. disk of 16-gauge pewter, the backstick must be used while spinning it. In spinning the cover, which requires a 6-in. disk, the metal must be spun to form a flange so that the cover will not slip into the bowl. To do this the edge is spun to the chuck, but the upper part is spun back to form this flange.

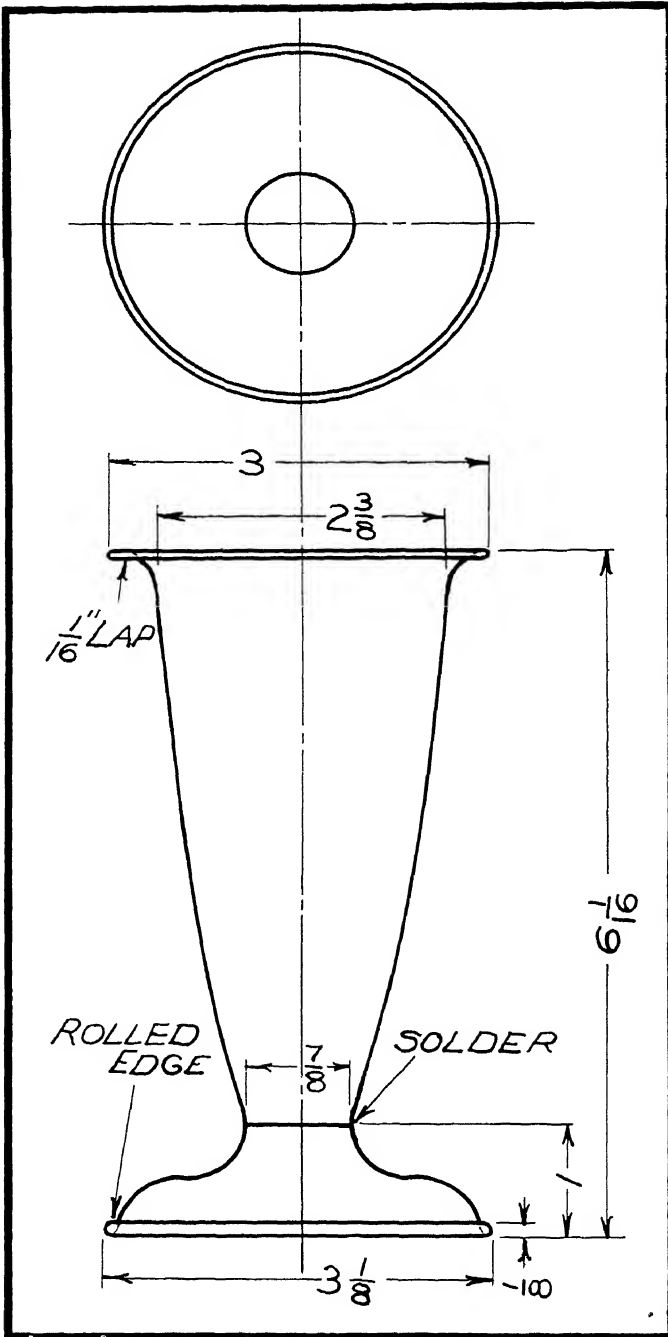


PLATE 42. Flower Vase



F L O W E R V A S E

THIS tall, graceful vase with its fluid lines is a thing of beauty, and a pleasure and satisfaction to make as it requires both patience and skill.

It is made of 20-gauge copper or pewter, in two parts which are soldered together. The body requires an 8-in. disk, and it is necessary to use a breakdown chuck before spinning the metal to the desired shape. The small lap on the top finishes it neatly and also adds strength. The base takes a 4-in. disk and is readily spun to the chuck.

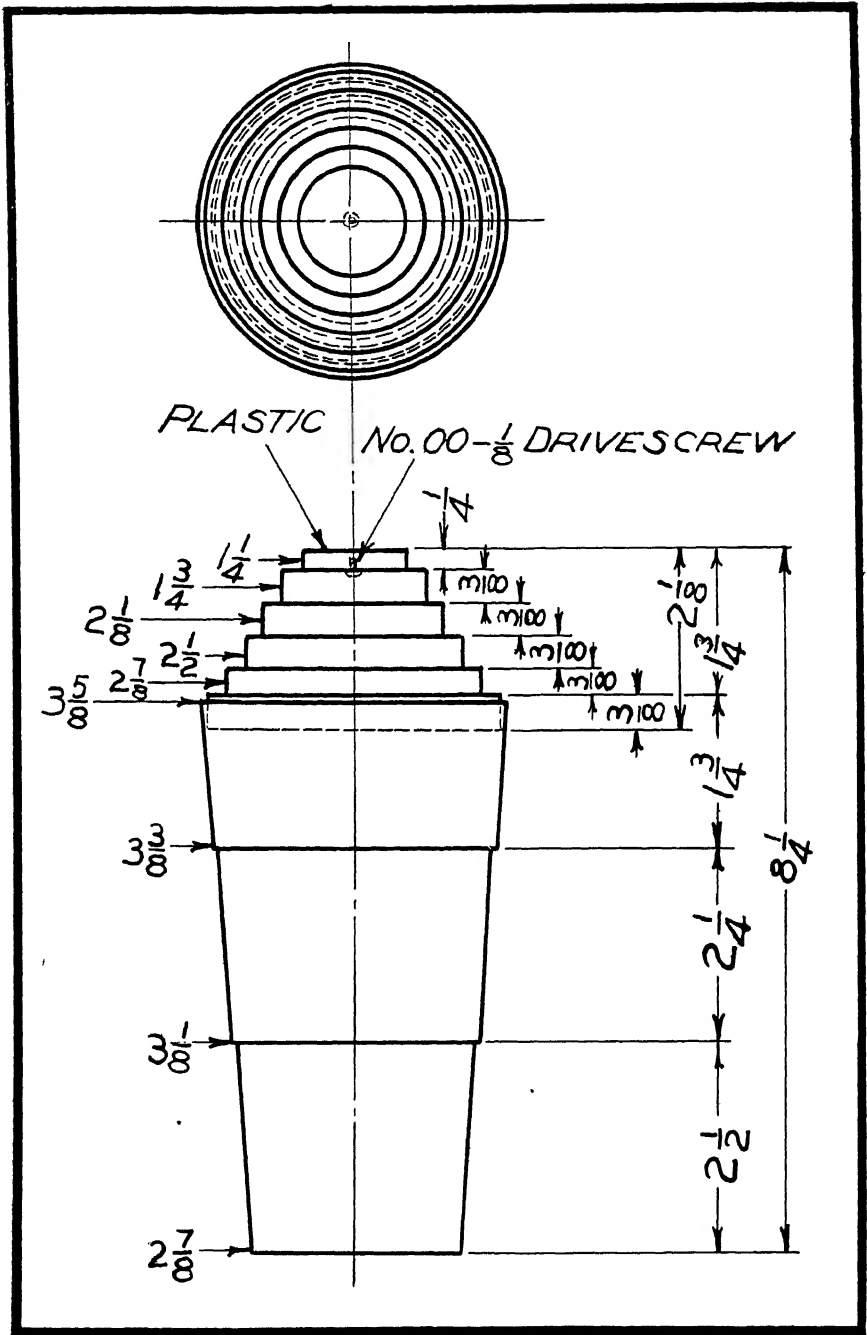


PLATE 43. Cocktail Shaker



COCKTAIL SHAKER

SINCE milk bars are so popular with the younger set, this shaker can be used to make some interesting milk shakes. But for the more sophisticated grownups, it is just the right size for a few cocktails. If used with the tray and beverage set shown on page 62 in *Metal Spinning*, by Reagan and Smith, they will form a complete hospitality set.

The body of the shaker is made from a 10-in. disk of 16-gauge pewter, and its spinning requires the use of a breakdown chuck. After the shell has been broken down, it is then spun to the finished chuck.

The top requires a 5-in. disk and is spun in successive steps to the chuck. A disk of $\frac{1}{4}$ -in. white plastic is fastened to the top with a drivescrew, thus giving a pleasing finish to the project.



ICE-CUBE PAIL

IF YOU want to please the lady of the house, make her one of these ice-cube pails. The handle makes it convenient to carry, and the pail is large enough to hold an ample supply of ice cubes.

It is made of a 10-in. disk of 16-gauge pewter or 18-gauge aluminum. In order to spin this project, a breakdown chuck must be used. The surface decoration is made with a trimming tool.

Pewter rope makes a most effective handle or aluminum tubing may be used, depending upon the material of which the pail is spun.

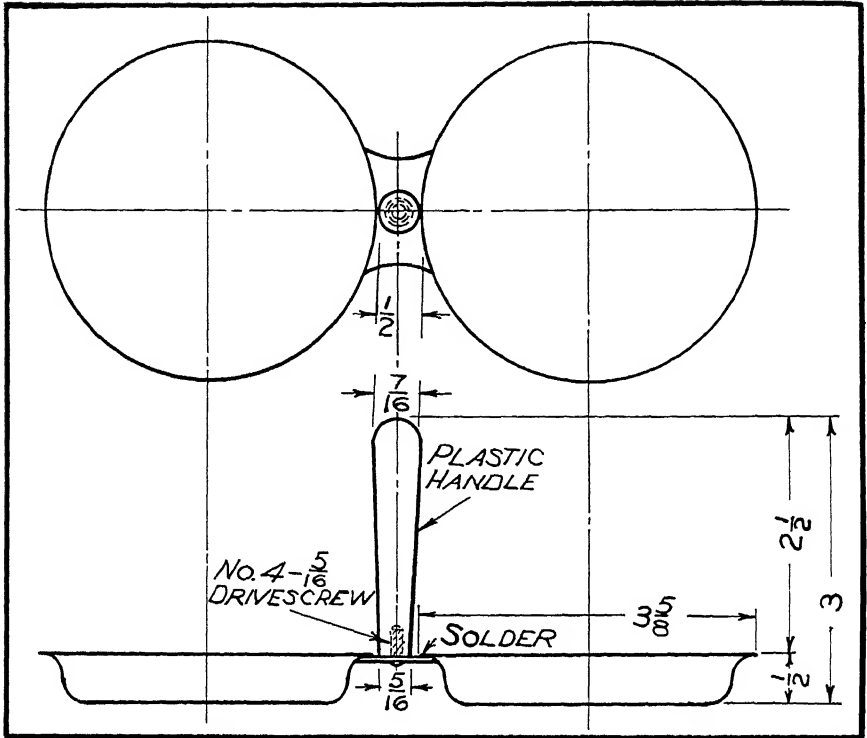
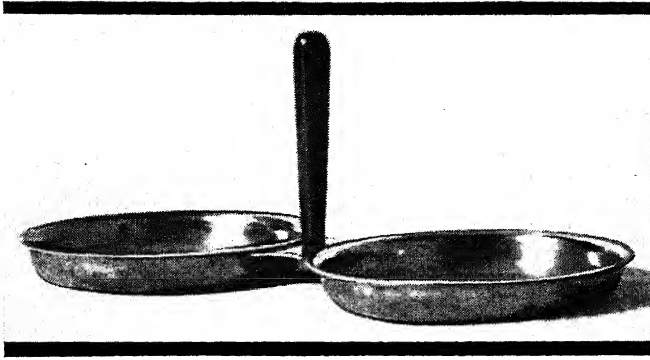


PLATE 45. Double Ash Tray



DOUBLE ASH TRAY

CALLING all smokers to one of the best ideas imaginable — a double ash tray. Now the man of the house can smoke all evening without getting up to empty his ash tray. And what a bonanza it will prove for the bridge table.

This is spinning in its simplest form. The two trays are spun separately from $4\frac{3}{8}$ -in. disks of 20-gauge copper or 18-gauge pewter, and are then soldered to a connecting piece as shown in the drawing. A tricky looking little plastic handle is fastened to the centerpiece with a drivescrew. Individual tastes may be expressed by different artistic combinations, for example, amber plastic used with copper or white used with pewter.

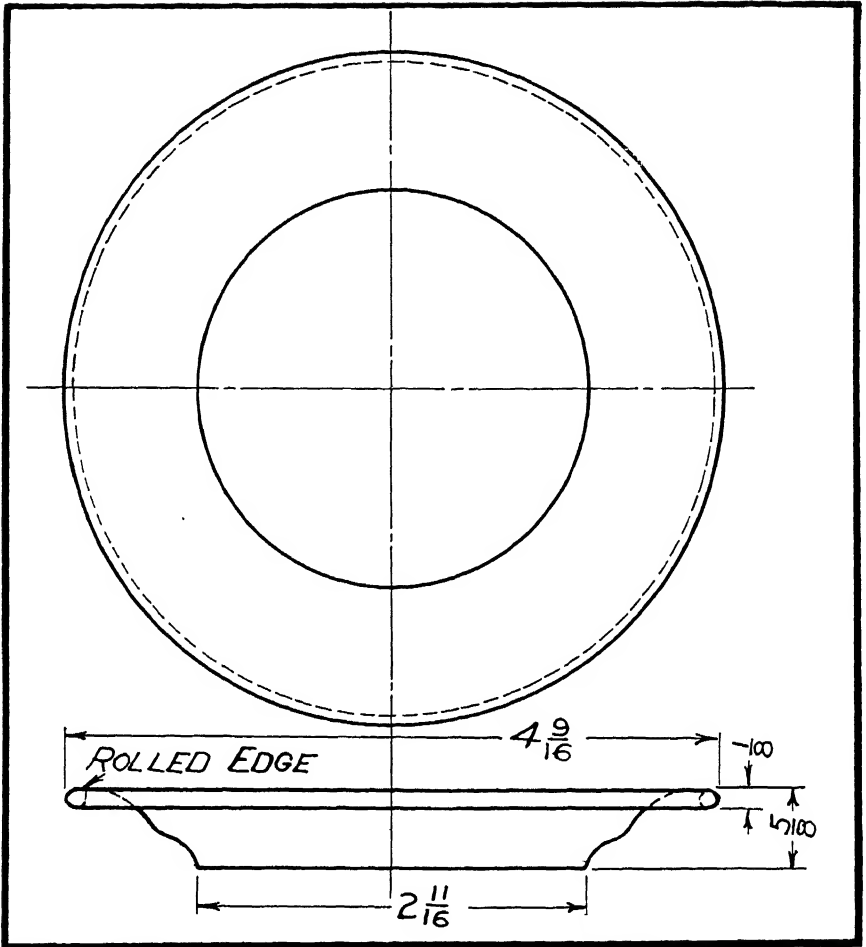


PLATE 46. Ash Tray



ASH TRAY

JUST a small project, but not as easy to make as it looks. The 5-in. disk of 18-gauge pewter or 24-gauge copper must be spun tightly to the chuck to insure the flowing lines that lead to the rolled edge.

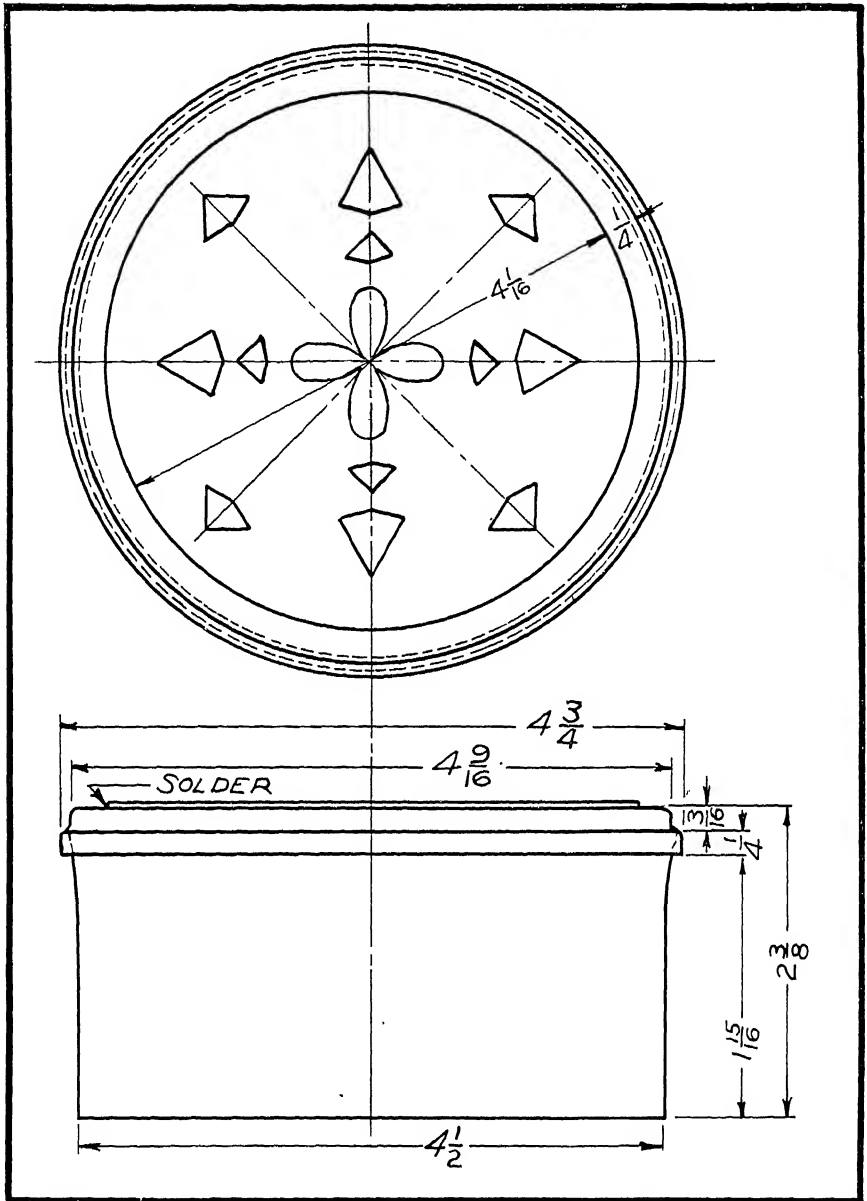


PLATE 47. Tobacco Box



TOBACCO BOX

THIS is something truly masculine — a box to hold tobacco. While simple in design, it is both handsome and useful. It is made of pewter with a pierced circle of copper applied to the lid.

The body requires an 8-in. disk of 18-gauge metal and the cover, a 6-in. disk of 24-gauge metal.

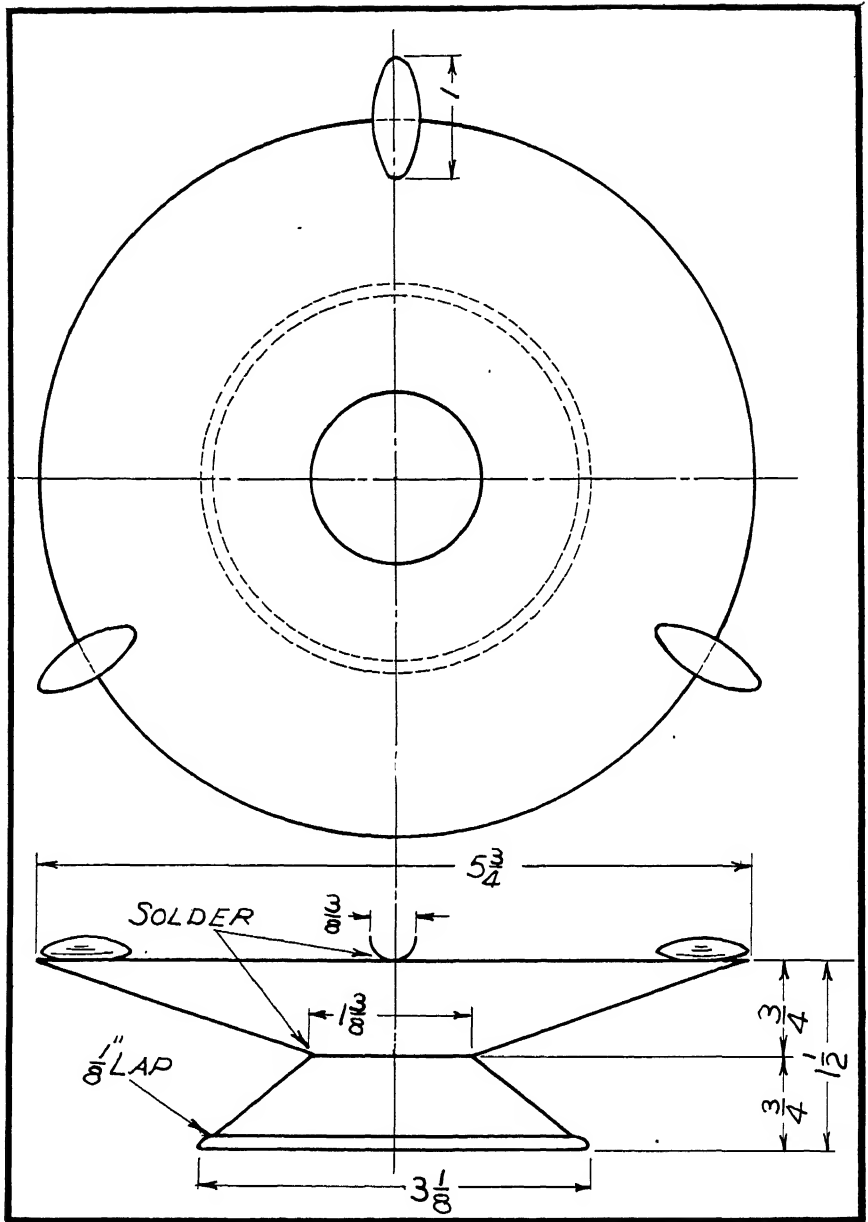
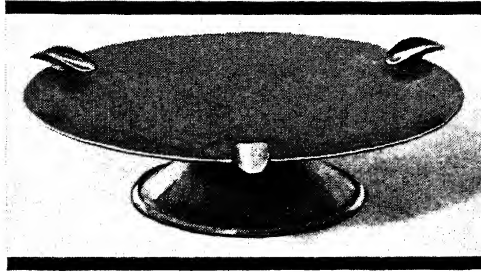


PLATE 48. Ash Tray



ASH TRAY

THIS footed ash tray will prove to be a most acceptable addition to a smoker's collection of ash trays. Made of copper, it is truly an aristocrat. The rests on the rim will hold either cigars or cigarettes with equal facility.

A 6-in. disk of 20-gauge copper is needed for the top, while the base requires a 4-in. disk. These are soldered together. The rests may be made of scrap metal and are soldered on the rim.

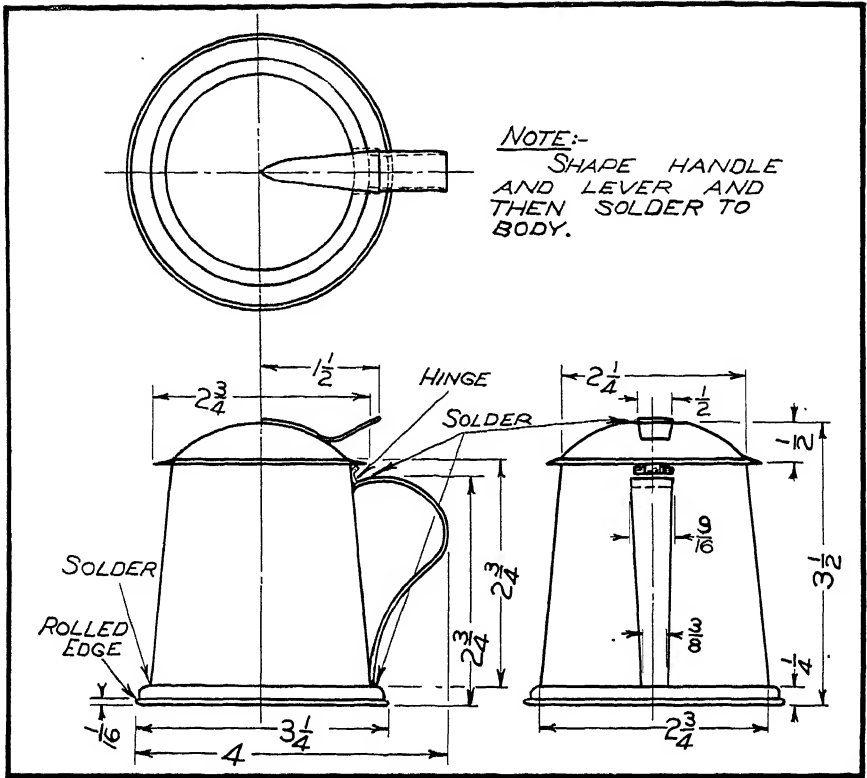


PLATE 49. Cigarette Container



CIGARETTE CONTAINER

EVERY man or boy loves a gadget, and here is one that combines usefulness with the unusual. It looks like an old-time syrup jug, but just press that lever on the lid and you'll find that it is the perkier little cigarette container you have ever seen.

This project is spun in three parts, the body, the base, and the lid. The body is made of a 6-in. disk of 18-gauge pewter, the base takes a 4-in. disk, and the lid, a 3-in. disk. After the body is spun, the bottom is cut out to form a hollow cylinder and it is then soldered to the base. The hinges are fitted and soldered to both body and lid. The handle and lever are shaped and then soldered in place.

Directions for soldering pewter are given on page 55 of *Metal Spinning*, by Reagan and Smith.

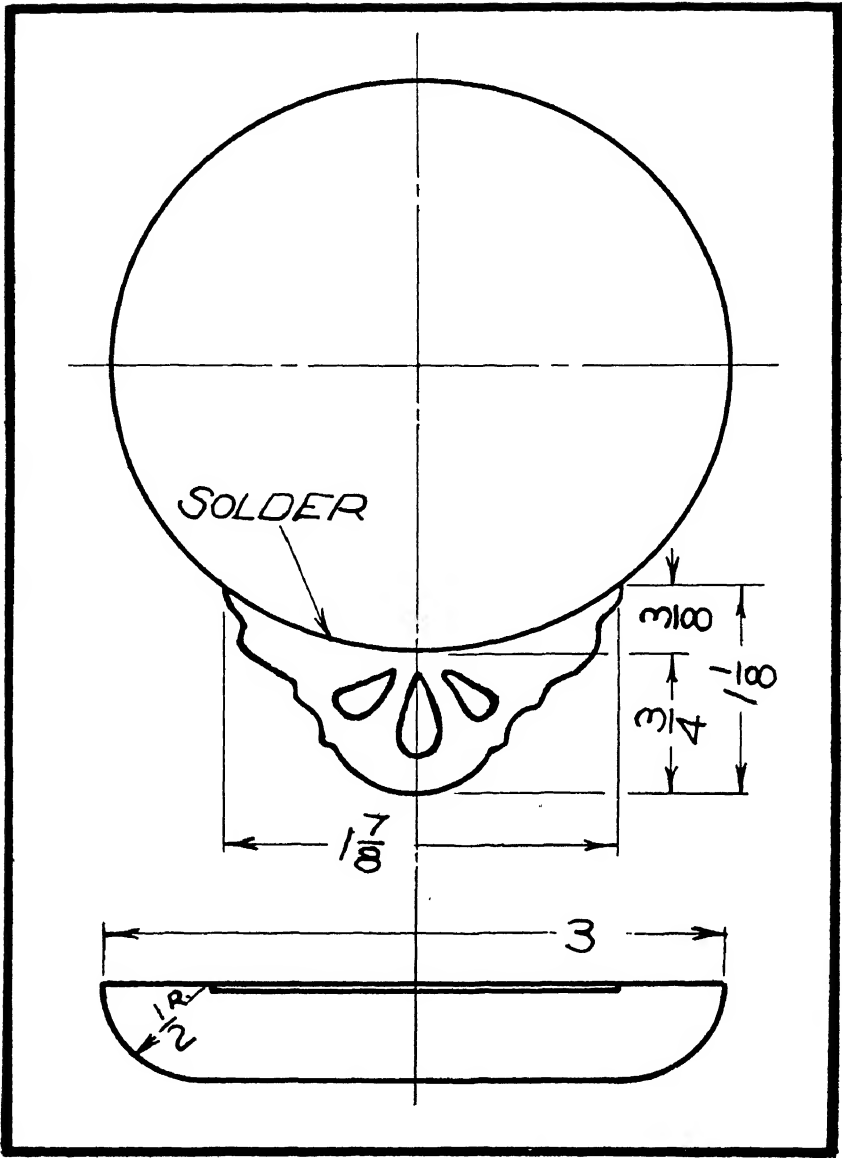


PLATE 50. Individual Ash Tray



INDIVIDUAL ASH TRAY

THIS individual ash tray is both useful and beautiful. The spinning operation is simple enough for the beginner. The pierced handle not only adds to its attractiveness but gives practice in piercing and soldering.

Four of them may be used together most effectively as a nested ash-tray set. They may be made of 20-gauge copper, brass, or Galalloy, or of 18-gauge pewter, and require a 4-in. disk.

PLASTICS

IN READING over the description of the different projects, you will notice that we often refer to a material called plastic, which we use as an auxiliary or decorative material. This is synthetic resin that is manufactured under many trade names but the general term, plastic, is gradually being accepted as covering them all.

It is a most satisfying material with which to work, as it does not require any specific equipment and very good results may be obtained with simple wood- or metalworking hand tools. However if a woodworking or metalworking lathe is available, more variety can be given to the work.

Plastic can be obtained in sheets, rods, and hollow cylinders of practically any size or thickness needed. It comes in a variety of colors so that it fits in with any decorative scheme desired, and is quite inexpensive. It is much harder than the average wood, and, as it has no grain, it can be worked in any direction, but it will shatter if the tools are forced into it too rapidly. This is particularly true when turning it on a lathe. If extensive work in plastics is being done on a lathe, it is often found necessary to insert a copper ring in the dead center to prevent friction that might cause the plastic to run. However, we did not find it necessary to do this in the plastic work we are showing.

In turning plastics, it is often desirable to run the lathe more slowly than when turning wood, but experience will set the best speed. It is well to hold the cutting edge of the tool about 1/16 in. below the center of the work with the handle of the chisel higher than the cutting edge. Practice will soon produce a long continuous shaving.

Plastic rods are used to make the handles on the hot-sauce server, the double ash tray, the small bonbonnières, and the cheese and cracker dish. These are turned to shape on a lathe and are held either in a chuck or turned between centers. Cyl-

inders of plastic are used in the making of the handles on the lamps and for the base of the candlestick. They are held on a slightly tapered mandrel, and are then turned on the lathe to the shape desired.

A very important point to know is that plastics may be bent in various shapes and around sharp curves, if first placed in hot water. The water should be about 200 deg. in temperature. Immerse the plastic from three to five minutes in the hot water, and then shape it as desired. It will then harden to a permanent shape in a very few minutes. If the plastic is allowed to remain in the hot water for thirty minutes, subsequent heating will not soften the material. This is quite essential, if the article is to be washed frequently. We followed this process in shaping the handles for the bun warmer and punch ladle, which were made from plastic rods.

Plastic in sheet form served to make the handles on the creamer and sugar bowl, on the coffee server, and for the trim on the cocktail shaker and relish dish. These were sawed out. Any fine-tooth band saw or jig saw may be used, or if more convenient, very good results may be obtained with a hack saw or a coping saw. We advise the fine-tooth saw, as a coarse one is liable to chip or crack the edge of the plastic.

Another interesting thing about plastic is the ease with which it can be carved by either hand or power tools. Hand grinders are very fine for this work, but needle files of various sizes as well as ordinary files or half round and round prove very satisfactory. Individual talent and taste will find expression in carving. We call your attention to the carved elephant on the small jewel box.

Another very important plastic operation is sanding. For shaping curves or beveling, a sander is quite invaluable. It may be a disk, drum, or belt sander. A coarse abrasive paper ($1\frac{1}{2}$) may be used to shape the plastic, but in finishing, a fine grade (4/0) must be used to eliminate the marks made by the coarser grade. Care must be taken not to burn the plastic as it disperses heat very slowly and will have a discolored or burned appearance, if too much pressure is applied while using a power sander.

When a color combination is desired, like that used on the

large copper bonbonnière, it is necessary to fit the parts and then cement them together. A knowledge of cementing is very essential in working plastics. The parts to be joined together must not be smoothed, as the cement will not adhere to a polished or buffed surface. Cement should be purchased in small quantities as it deteriorates rapidly. It should be mixed on a piece of glass with a glass rod or tube. A little experimenting will show the proportions to be used. Ordinarily, one drop of acid to an amount of cement about the size of a pea should be the correct mixture. Too much acid will cause the cement to set too quickly, while too small an amount will not give a solid hard joint. After the cement has set thoroughly, it may be machined or sanded without danger of breaking. In all cases the cementing must be done before the final polishing is attempted. Any firm dealing in plastics will be able to supply the cement and acid used.

This brings us now to the final operation in the working of plastics, the polishing. A mirrorlike polish may be given to the plastics after the marks of the tools or sanding have been removed. This may be done on a buffer, using a 6-in. cotton buffing wheel, running at a speed of 3000 r.p.m. A medium buffing compound is used on the wheel, and the pieces are buffed until the desired polish is obtained.

We have referred in our descriptive text very often to fastening handles or trim onto the different projects with drivescrews. These answer much the same purpose as rivets, and are very desirable as the joints made in this manner are permanent. Holes of the proper size are drilled, and the screws are driven in lightly until the parts are held together securely. We are furnishing a table showing the size of the drill recommended for the corresponding screw.

<i>Size of Drivescrew</i>	<i>Number of Drill</i>
2/0	55
0	50
2	43
4	36
6	30

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